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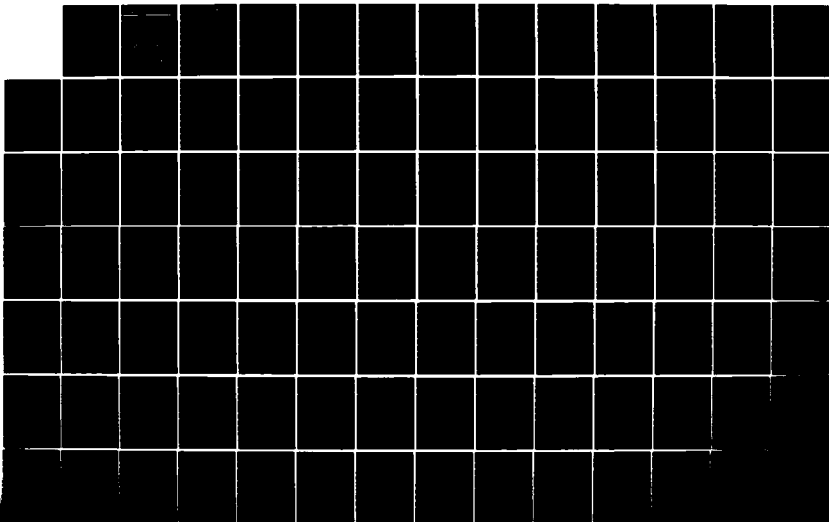
RESERVOIR CONTROL CENTER: ACTIVITIES AND
ACCOMPLISHMENTS OF THE SOUTHWEST. (U) CORPS OF
ENGINEERS DALLAS TX SOUTHWESTERN DIV JAN 81

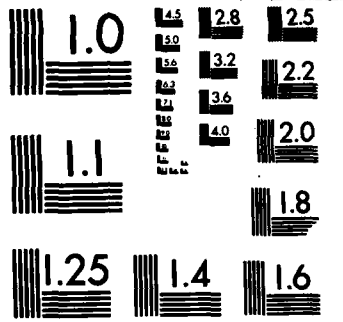
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Southwestern Division

Reservoir Control Center

(Instream Flow Study)

APPENDIX A TO
PART III OF THE

ANNUAL REPORT

1980

AD-A156 497

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US Army Corps of Engineers
Southwestern Division
Dallas, Texas

January 1981

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This report presents activities and accomplishments of the Southwestern Division (SWD), related to reservoir regulation and water management through FY 1980. Companion publications, "Parts II and III of the Annual Report", have been prepared containing detailed summaries of the districts, and minutes of coordinating committee meetings, and instream flow problems and needs evaluation, respectively. <i>Approved for public release; distribution unlimited</i>		

APPENDIX A
 RESERVOIR CONTROL CENTER
 1980 ANNUAL REPORT

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DAMS AND RESERVOIRS IN THE SOUTHWESTERN DIVISION	Inside Front Cover
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MONTHLY DISCHARGE FREQUENCY AND DURATION CURVES

SECTION IX - INSTREAM FLOW STUDY

1. Summary of Instream Flow Problems and Needs. The instream flow problems and needs evaluation program established by OCE is in response to President Carter's 12 July 1978 memorandum on "Environmental Quality and Water Resources Management". The EC directs all field operating activities having civil works projects responsibilities to conduct a project evaluation of all existing Corps of Engineers water resources projects. The evaluations will be used to assess the magnitude of existing instream flow related problems and needs, the potential cost necessary to meet the identified needs, the opportunities to enhance instream flow affected to accomplish necessary actions. Criteria for the evaluations are contained in EC 1110-2-214 and with further guidance provided by SWDED-XR letter dated 18 August 1980 (Appendix A).

The Southwestern Division Office established a program in mid 1978 to determine minimum flow requirements for fish and wildlife purposes below Corps projects. Several problem areas were determined. Minimum flows were initiated at several projects as a result of that program. Another result was the initiation of studies of several other projects to determine the need for minimum flow and the magnitude of those flows. The Southwest Division has been working with the US Fish and Wildlife Service in an attempt to arrive at a mutually acceptable solution to these problems within present operational constraints. Some of the quantity information required by the EC had therefore been compiled.

The instream flow evaluation program within Southwestern Division has resulted in the evaluation of 84 of the 93 projects. Those omitted are eight low lift navigation structures on the main stem of the Arkansas River and one on the Arkansas Post Canal. These projects have no apparent water quality or water quantity problems associated with project regulation. Low flows on the main stem of the Arkansas River are controlled by hydropower operations at upstream storage and run of river projects. Release requirements are set at the Dardanelle power station which results in adequate minimum flows downstream except under extreme drought conditions.

The number of projects to be evaluated varied tremendously between districts with Galveston District having only two projects to evaluate while Tulsa District had 44. The amount of detail included also varies from district to district. Little Rock and Fort Worth Districts presented a considerable amount of detail on most projects. Tulsa District, due to the large number of projects, grouped projects according to reservoir size and depth, location and outlet works configuration with generalized descriptions for the water quality portions plus known specific problems for individual projects. Of those evaluated about twenty within SWD were described as having no water quality problems or at least none noted to date. Most of these are low lift locks and dams along the McClellan-Kerr Arkansas River Navigation Project. Others are small flood control and conservation projects that do not stratify or if they do it is a mild stratification that is easily broken up by wind action.

Eight projects are currently being studied as part of larger more comprehensive basin restudies or site specific studies to address known high profile problems. Three site specific studies are at Lake Texoma (Denison Dam), Sam Rayburn Dam and Table Rock Dam. These three have been identified by state agencies as having low dissolved oxygen in their releases. An additional study is proposed for Lake Texoma.

Quantity wise, numerous projects have no or extremely low releases for extended periods of time. In appropriated rights states (Texas and New Mexico) most releases, other than for flood control, are made at the request of compact commissions or other state or local agencies having rights to the stored or inflowing waters. Therefore, in most cases, the Corps has no authority to release conservation water for other uses. Even in other states much of the conservation storage is under contract to local governmental agencies and therefore cannot be used to enhance downstream areas.

Twenty projects were identified as having problems severe enough that the districts recommended studies to determine the extent of the problem and alternative solutions. Seven of these are water quantity problems identified by the US Fish and Wildlife Service. The others are water quality problems generally associated with deep stratified impoundments with low level outlets. They are generally low dissolved oxygen, high temperature in trout fisheries, hydrogen sulfide, iron, manganese or pH. Many other reservoirs screened in this program had similar problems but they are not as severe as those indicated.

Table 1 shows projects where studies are recommended including priorities and funding requirements.

<u>PROJECT</u>	<u>PRIORITY</u>	<u>FUNDS</u>
Tenkiller Ferry	1	\$30,000
Lake Texoma (Denison Dam)	2	50,000
Sommerville	3	50,000
Nimrod	4	35,000
Keystone	5	30,000
Oologah	6	30,000
Wister	7	20,000
Blue Mountain	8	15,000
Eufaula	9	15,000
Broken Bow	10	15,000
Lavon	11	60,000
Bardwell	12	60,000
Navarro Mills	13	55,000
Proctor	14	55,000
Belton	15	50,000
Stillhouse	16	55,000
Clearwater	17	10,000
Hugo	18	15,000
Greers Ferry	19	20,000
Pine Creek	20	15,000

The Southwestern Division evaluation process required a large expenditure of resources which due to the time frame involved had to be diverted from other programs. These programs are being rescheduled as quickly as manpower and funding allow. The evaluations are, in some instances, the first comprehensive look at problems encountered at the projects. In some districts personnel from Hydraulics, Planning, Operations and project personnel cooperated in the effort to identify all known problems. We feel that this study evaluation will serve as basis for future work to improve the quality and quantity of releases from SWD projects.

2. Detailed Project Evaluation of Instream Flow Problems and Needs. Narratives describing detailed evaluations for individual projects are contained in this volume. An index is shown on pages 4a through 4e.

3. Monthly Discharge - Frequency and Discharge Duration Relations. Monthly discharge - frequency and discharge - duration curves are included in Appendix A for those projects that were evaluated. Projects are in the order shown on pages 4a and 4b.

INSTREAM FLOW PROBLEMS AND NEEDS EVALUATION INDEX

LAKE NAME	STREAM	DIST	STATE	YR COMP	POOL ELEVATION		CAPACITY 1000 AF		PAGE NO
					CONS	FC	CONS	FC	
Introduction									
WHITE RIVER BASIN									
Beaver	White	LRD	AR	66	1120.0	1130.0	1652	300	5
Table Rock	White	LRD	AR/MO	58	915.0	931.0	2702	760	526
Bull Shoals	White	LRD	AR/MO	52	654.0	695.0	3048	2360	15
Norfolk	North Fork	LRD	AR/MO	45	552.0	580.0	1251	732	26
Clearwater	Black	LRD	MO	48	494.0	567.0	22	391	36
Greers Ferry	Little Red	LRD	AR	62	461.0	487.0	1911	934	44
ARKANSAS RIVER BASIN									
Pueblo	Arkansas R	AD*	CO	74	4880.6	4898.7	264	93	
Trinidad	Purgatoire R	AD	CO	78	6226.4	6260.0	64	58	55
John Martin	Arkansas	AD	CO	51	3851.0	3870.0	351	270	57
Cheney	N F Minnescah	TD*	KS	64	1421.6	1429.0	167	81	
Eldorado	Walnut	TD	KS	80	1339.0	1347.5	157	79	59
Kaw	Arkansas	TD	OK/KS	76	1010.0	1044.5	429	919	64
Great Salt Plains	Salt Fork Ark	TD	OK	41	1125.0	1138.5	31	240	70
Keystone	Arkansas	TD	OK	64	723.0	754.0	618	1219	77
Mayburn	Polecat Cr	TD	OK	50	761.5	784.0	7	48	86
Toronto	Verdigris R	TD	KS	60	961.5	931.0	22	178	94
Fall River	Fall	TD	KS	49	948.5	987.5	24	235	102
Elk City	Elk	TD	KS	66	792.0	825.0	34	256	110
Big Hill	Big Hill Cr	TD	KS	81	858.0	867.5	27	13	120
Oologah	Verdigris R	TD	OK	63	638.0	661.0	553	966	125
Hulah	Caney	TD	OK/KS	51	733.0	765.0	36	258	136
Copan	L Caney	TD	OK/KS	80	710.0	732.0	43	184	146
Birch	Birch Creek	TD	OK	79	750.5	774.0	19	39	151
Skiatook	Holmby Creek	TD	OK	82	714.0	729.0	305	182	156
Newt Graham LD 18	Verdigris	TD	OK	70	532.0	-	24	0	161
Chouteau LD 17	Verdigris	TD	OK	70	511.0	-	23	0	163
Council Grove	Neosho R	TD	KS	65	1270.0	1289.0	38	76	165
Marion	Cottonwood R	TD	KS	68	1350.5	1358.5	86	60	175
John Redmond	Neosho R	TD	KS	64	1039.0	1068.0	82	563	189
Grand Lake	Neosho (Grand)	TD*	OK	40	745.0	755.0	1672	525	
Lake Hudson	Neosho (Grand)	TD*	OK	64	619.0	636.0	200	244	
Fort Gibson	Neosho (Grand)	TD	OK	52	554.0	582.0	365	919	198
Webbers Falls LD 16	Arkansas	TD	OK	70	490.0	-	165	0	208
Tenkiller Ferry	Illinois R	TD	OK	52	632.0	667.0	654	577	210
Conchas	Canadian R	AD	NM	39	4201.0	4218.0	330	198	221
Meredith	Canadian R	TD*	TX	65	2941.3	2965.0	945	463	
Thunderbird	Little R	TD*	TX	65	1039.0	1049.4	120	77	
Optima	N Canadian R	TD	OK	78	2763.5	2779.0	129	101	223
Fort Supply	Wolf Cr	TD	OK	42	2004.0	2028.0	14	87	228
Canton	N Canadian R	TD	OK	48	1615.2	1638.0	116	268	234
Eufaula	Canadian R	TD	OK	64	585.0	597.0	2329	1470	242
R S Kerr LD 15	Arkansas	TD	OK	70	460.0	-	494	0	251
W D Mayo LD 14	Arkansas	TD	OK	70	413.0	-	16	0	253
Wister	Poteau R	TD	OK	49	471.6	502.5	27	400	255
LD 13	Arkansas	LRD	AR/OK	69	392.0	-	54	0	
Ozark-J T LD 12	Arkansas	LRD	AR	69	372.0	-	148	0	504
Dardanelle LD 10	Arkansas	LRD	AR	64	338.0	-	486	0	511
Blue Mountain	Petit Jean	LRD	AR	47	384.0	419.0	25	233	266
LD 9	Arkansas	LRD	AR	69	287.0	-	65	0	
Toad Suck Ferry LD 8	Arkansas	LRD	AR	69	265.0	-	35	0	
Nimrod	Fourche La Pave	LRD	AR	42	342.0	373.0	29	307	273
Murray LD 7	Arkansas	LRD	AR	69	249.0	-	87	0	
D D Terry LD 6	Arkansas	LRD	AR	68	231.0	-	50	0	
LD 5	Arkansas	LRD	AR	68	213.0	-	65	0	
LD 4	Arkansas	LRD	AR	68	196.0	-	70	0	
LD 3	Arkansas	LRD	AR	68	182.0	-	46	0	
LD 2	Arkansas	LRD	AR	67	162.0	-	110	0	519
LD 1	Arkansas	LRD	AR	67	142.0	-	2	0	

* Section 7 Flood Control Projects

Includes deed storage, conservation, water supply, power, irrigation, etc.

RED RIVER BASIN								
Altus	N F Red	TD*	OK	46	1559.0	1562.0	141	21
Tom Steed	W Otter Creek	TD*	OK	75	1411.0	1414.0	96	20
Lake Kemp	Wichita R	TD*	TX	77	1144.0	1156.0	299	225 284
Waurika	Beaver Creek	TD	OK	78	951.4	962.5	203	140 290
Foss	Washita	TD*	OK	61	1652.0	1668.6	256	181
Fort Cobb	Cobb Creek	TD*	OK	59	1342.0	1354.8	78	64
Arbuckle	Rock Creek	TD*	OK	67	872.0	885.3	72	36
Lake Texoma	Red	TD	TX/OK	45	617.3	640.0	2836	2660 299
Pat Mayse	Sanders Creek	TD	TX	68	451.0	460.5	124	65 310
Hugo	Kiamichi R	TD	OK	74	404.5	437.5	157	809 317
Pine Creek	Little R	TD	OK	69	443.5	480.0	78	388 322
Broken Bow	Mountain Fork	TD	OK	69	599.5	627.5	919	450 331
DeQueen	Rolling Fork	TD	AR**	77	437.0	473.5	35	101 342
Gilliam	Cossatot	TD	AR**	76	502.0	569.0	33	189 348
Dierks	Saline R	TD	AR**	76	526.0	557.5	30	67 355
Millwood	Little R	TD	AR	66	259.2	287.0	207	1653 362
Wright Patman	Sulphur River	FWD	TX	56	220.0	259.5	143	2509 368
Lake O the Pines	Cypress Creek	FWD	TX	60	228.5	249.5	251	580 375

NECHES RIVER BASIN								
Sam Rayburn	Angelina R	FWD	TX	65	164.4	173.0	2898	1009 380
B A Steinhagen	Neches R	FWD	TX	51	81.0	83.0	70	24 386

TRINITY RIVER BASIN								
Benbrook	Clear Fork	FWD	TX	52	694.0	724.0	88	170 391
Lewisville	Elm Fork	FWD	TX	54	515.0	532.0	465	525 398
Grapevine	Denton Cr	FWD	TX	52	535.0	560.0	189	248 403
Lavon	East Fork	FWD	TX	77	492.0	503.5	457	277 408
Navarro Mills	Richland Cr	FWD	TX	68	424.5	443.0	63	149 414
Bardwell	Waxahachie Cr	FWD	TX	65	421.0	439.0	55	85 420

SAN JACINTO RIVER BASIN								
Barker	Buffalo Bayou	GD	TX	45	-	107.0	0	207 426
Addicks	Buffalo Bayou	GD	TX	48	-	114.0	0	205 429

BRAZOS RIVER BASIN								
Whitney	Brazos	FWD	TX	51	533.0	571.0	627	1372 432
Waco	Bosque	FWD	TX	65	455.0	500.0	153	574 438
Proctor	Leon R	FWD	TX	63	1162.0	1197.0	59	315 443
Belton	Leon R	FWD	TX	54	594.0	631.0	458	640 449
Stillhouse H	Lampasas R	FWD	TX	68	622.0	666.0	236	395 455
North Fork	N F San Gabriel	FWD	TX	79	791.0	834.0	37	93 461
Granger	San Gabriel R	FWD	TX	79	504.0	528.0	66	179 466
Somerville	Yegua Cr	FWD	TX	67	238.0	258.0	160	347 471

COLORADO RIVER BASIN								
Twin Buttes	S&M Concho R	FWD*	TX	63	1940.2	1969.1	186	454
O C Fisher	N Concho R	FWD	TX	52	1908.0	1938.5	119	277 478
Hords Cr	Hords Cr	FWD	TX	48	1900.0	1920.0	9	17 482
Marshall Ford	Colorado R	FWD*	TX	40	681.0	714.0	1172	780

GUADALUPE RIVER BASIN								
Canyon	Guadalupe R	FWD	TX	64	909.0	943.0	386	355 487

RIO GRANDE BASIN								
Platoro	Conejos R	AD*	CO	51	10027.5	10034.0	54	6
Abiquiu	Rio Chama	AD	NM	63	-	6283.5	0	568 492
Cochiti	Rio Grande	AD	NM	75	5321.45	5460.5	47	539 494
Gallisteo	Gallisteo Cr	AD	NM	70	-	5608.0	0	90 496
Jemez Canyon	Jemez R	AD	NM	53	5160.0	5232.0	2	104 498
Los Esteros	Pecos R	AD	NM	80	4776.5	4797.0	267	182 500
Sumner	Pecos R	AD*	NM	37	4261.0	4282.0	47	86
Two Rivers	Rio Hondo	AD	NM	63	-	4032.0	0	168 502

** These projects transferred to Little Rock District 1 Oct 80.

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Marshall Ford Dam (Mansfield Dam) Lake Travis	Colorado	
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Pueblo	Arkansas	
R S Kerr LD 15	Arkansas	251
Sam Rayburn	Neches	380
Sanford Dam, Lake Meredith	Arkansas	
Skiatook	Arkansas	156
Somerville	Brazos	471
Stillhouse H	Brazos	455
Sumner	Rio Grande	
Table Rock	White	526
Tenkiller Ferry	Arkansas	210
Texoma Lake (Denison Dam)	Red	299
Thunderbird	Arkansas	
Toad Suck Ferry LD 8	Arkansas	
Tom Steed	Red	
Toronto	Arkansas	94
Trinidad	Arkansas	55
Twin Buttes	Colorado	
Two Rivers	Rio Grande	502
W D Mayo LD 14	Arkansas	253
Waco	Brazos	438
Waurika	Red	290
Webbers Falls LD 16	Arkansas	208
Whitney	Brazos	432
Wister	Arkansas	255
Wright Patman	Red	368

NO 116871 2/10/75 1-15

NO 116871 2/10/75 1-15

WILLIAM J. BROWN

Mean Daily Flows Existing Conditions

[illegible]

Bull Shoals
 A-1 SLIP/IN
 FEBRUARY 1964 EDITION

Mean Daily Flows Existing Conditions

	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
1000																				
900																				
800																				
700																				
600																				
500																				
400																				
300																				
200																				
100																				
0																				
1000																				
900																				
800																				
700																				
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1000																				
900																				
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400																				
300																				
200																				
100																				
0																				
1000																				
900																				
800																				
700																				
600																				
500																				
400																				
300																				
200																				
100																				
0																				

Fig 5

Bull Shoals
8-1 FLIPPING
MARCH 1964 DURATION

Mean Daily Flows Existing Conditions

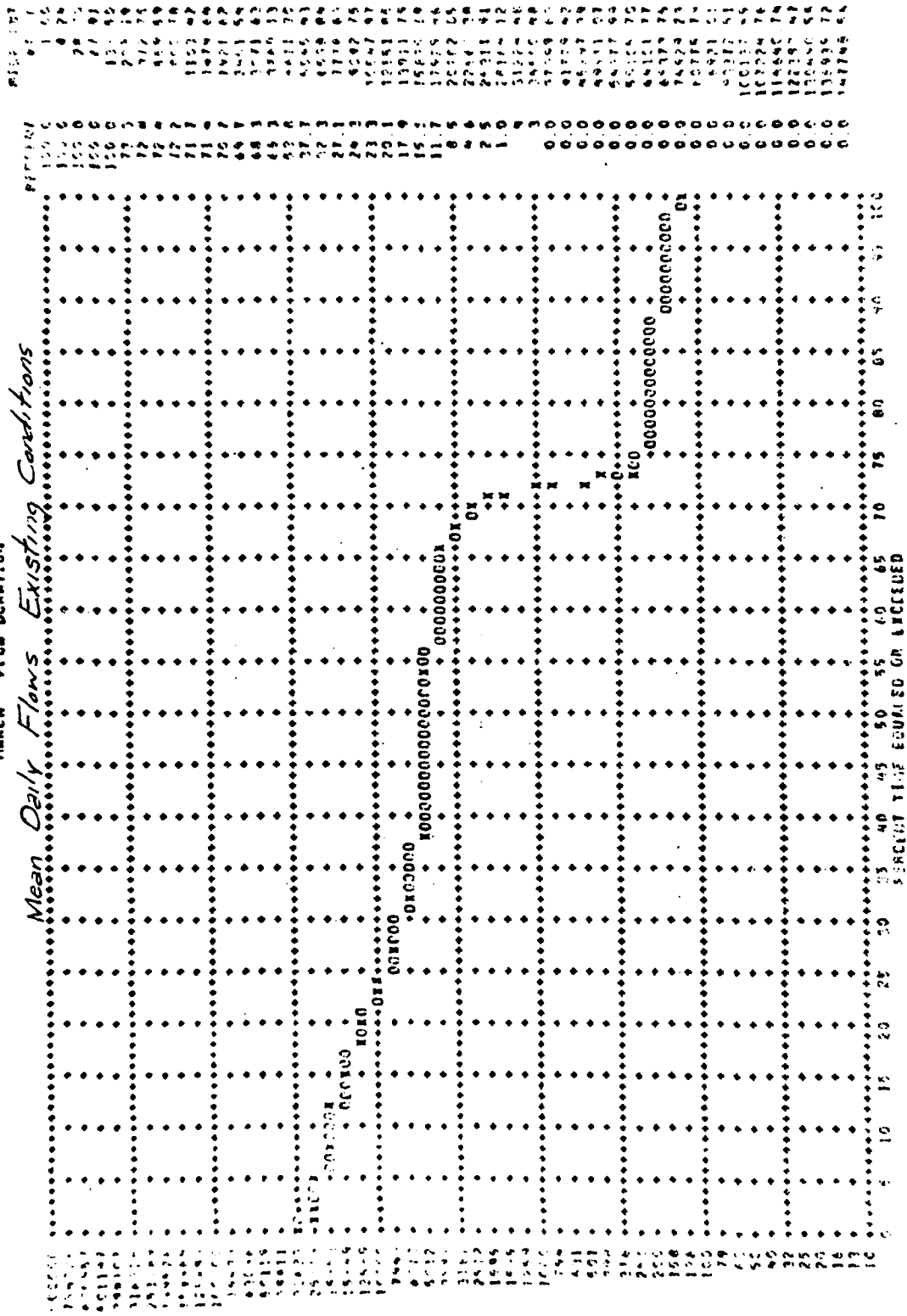


Fig 6

Ball Shop
April 1-6
April 6-11
April 11-16
April 16-21
April 21-26
April 26-31

Mean Daily Flows Existing Conditions

Mean Daily Flows		Existing Conditions	
PERCENT TIME EQUALLED OR EXCEEDED	PERCENT TIME EQUALLED OR EXCEEDED	PERCENT TIME EQUALLED OR EXCEEDED	PERCENT TIME EQUALLED OR EXCEEDED
100	100	100	100
95	95	95	95
90	90	90	90
85	85	85	85
80	80	80	80
75	75	75	75
70	70	70	70
65	65	65	65
60	60	60	60
55	55	55	55
50	50	50	50
45	45	45	45
40	40	40	40
35	35	35	35
30	30	30	30
25	25	25	25
20	20	20	20
15	15	15	15
10	10	10	10
5	5	5	5
1	1	1	1

**Bull Shoals
R-1 FLIPPIN
MEV FLOW DURATION**

Mean Daily Flows Existing Conditions

PERCENT TIME EQUALLED OR EXCEEDED	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
95	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
90	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
85	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
80	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
75	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
70	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
65	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
60	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
55	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
50	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
45	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
40	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
35	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
30	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
25	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
20	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
15	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
10	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
5	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Fig 8

Bull Shoals

W-1 F11220
TIME FLOW DURATION

Mean Daily Flows Existing Conditions

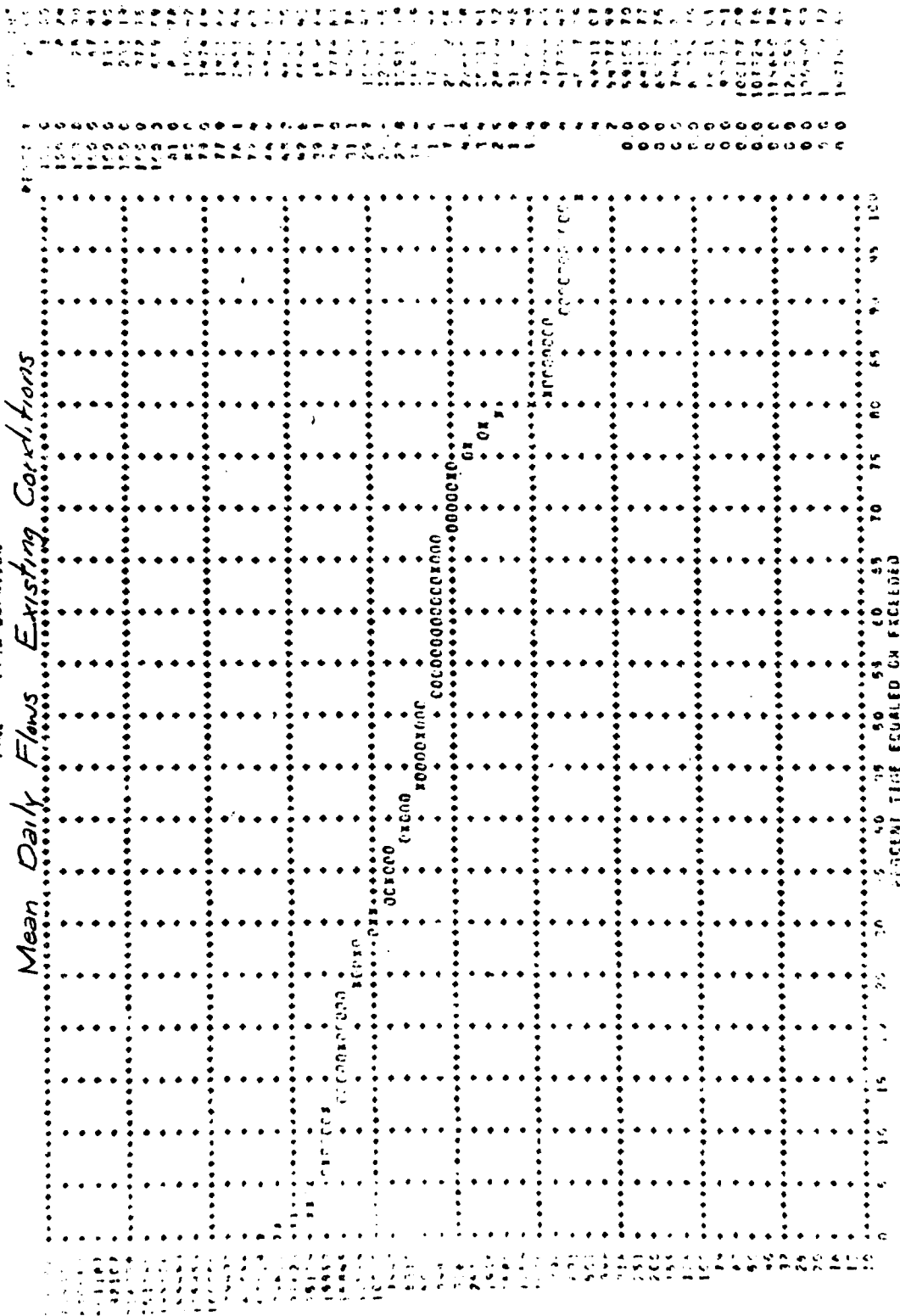


Fig 9

Bull Shoals

UNITED STATES
NAVY

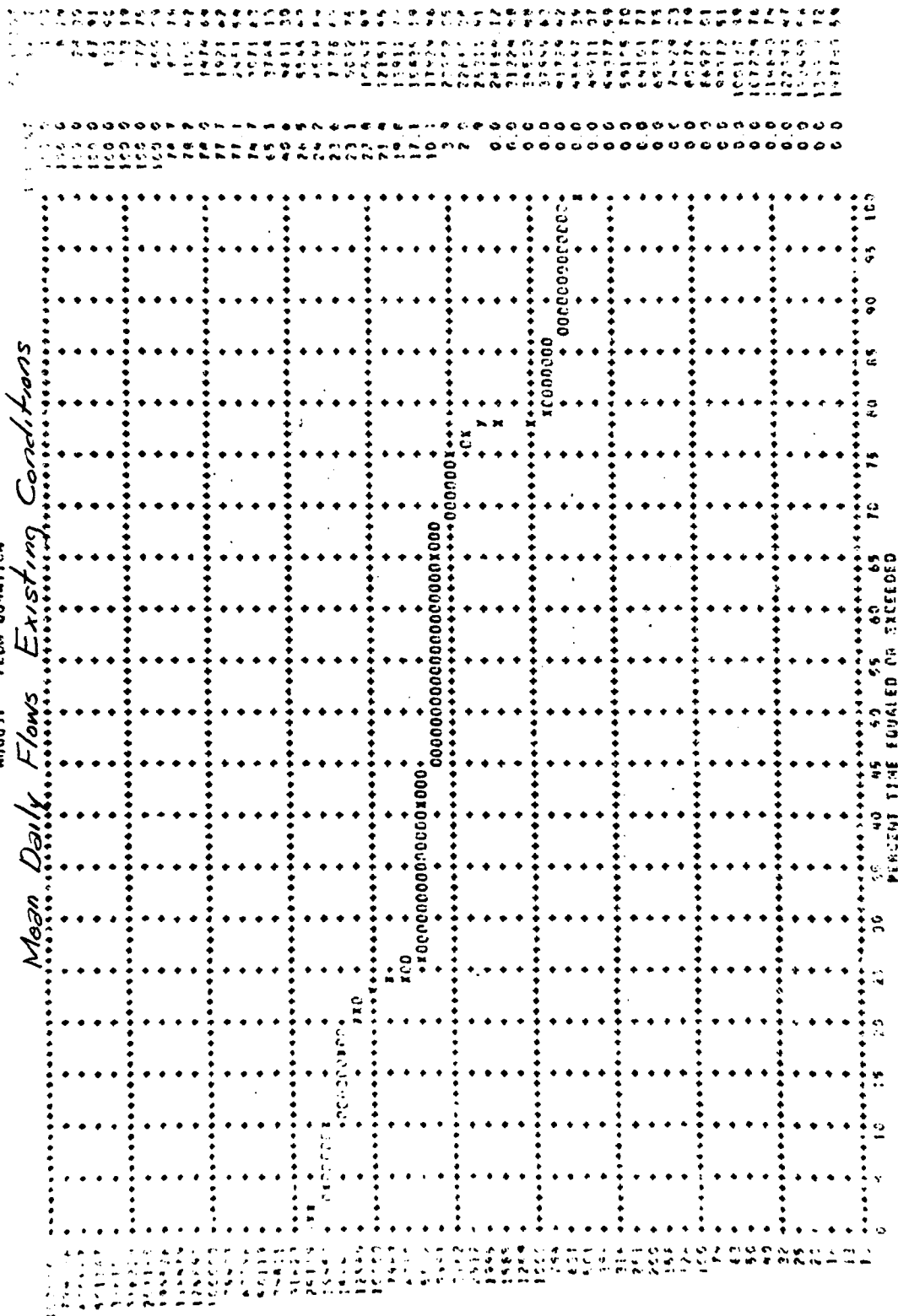
Mean Daily Flows Existing Conditions

	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
1000																				
900																				
800																				
700																				
600																				
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600																				
500																				
400																				
300																				
200																				
100																				
0																				

Fig 10

ALL INFORMATION CONTAINED
HEREIN IS UNCLASSIFIED
DATE 08-19-2010 BY 60322
UCBAW

Mean Daily Flows Existing Conditions



Mean Daily Flows Existing Conditions

Fig 12

Bull Shoals

W-1 FLIPPIAN
OCTOBER 1963 DURATION

Mean Daily Flows Existing Conditions

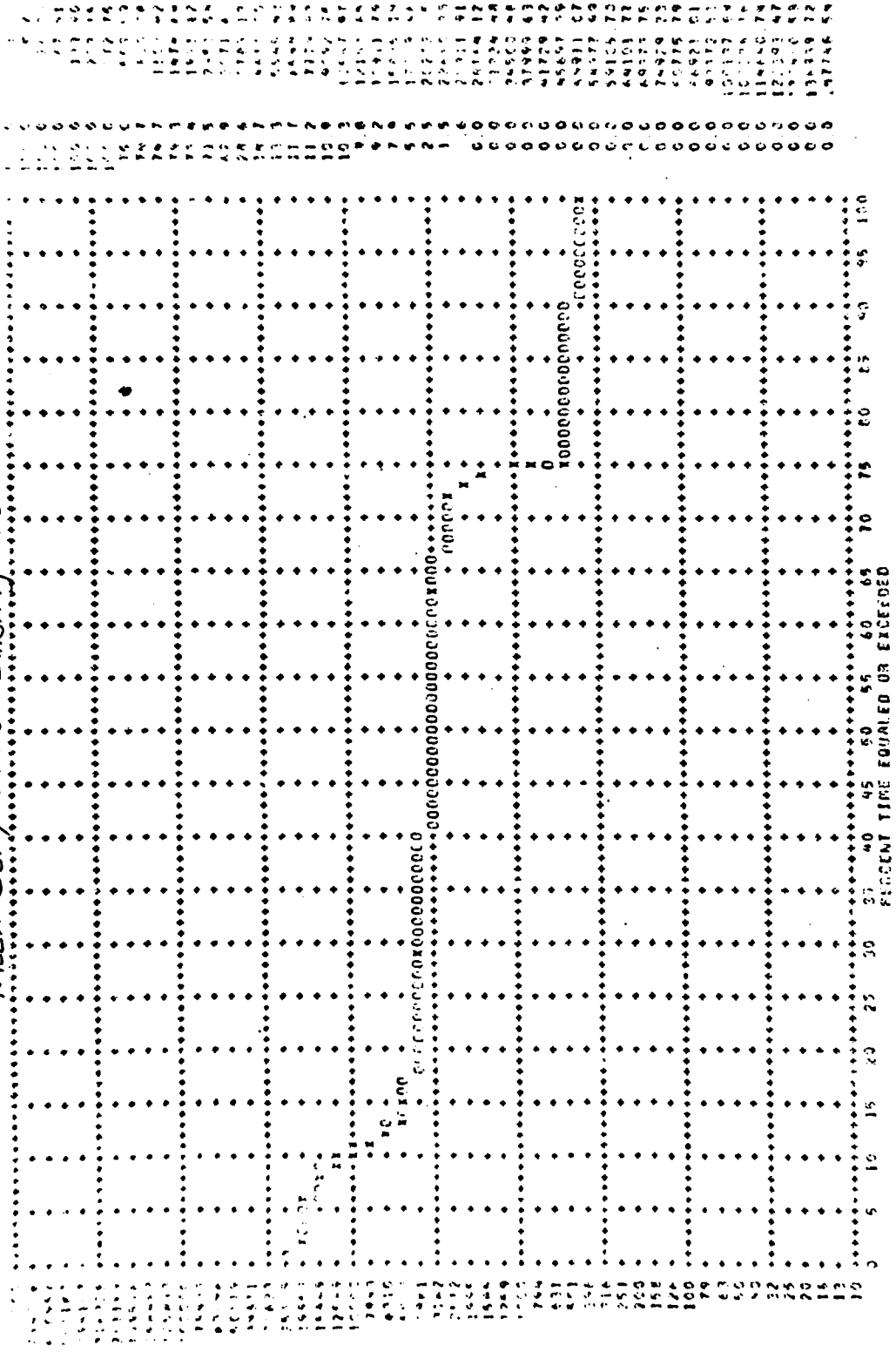


Fig 13

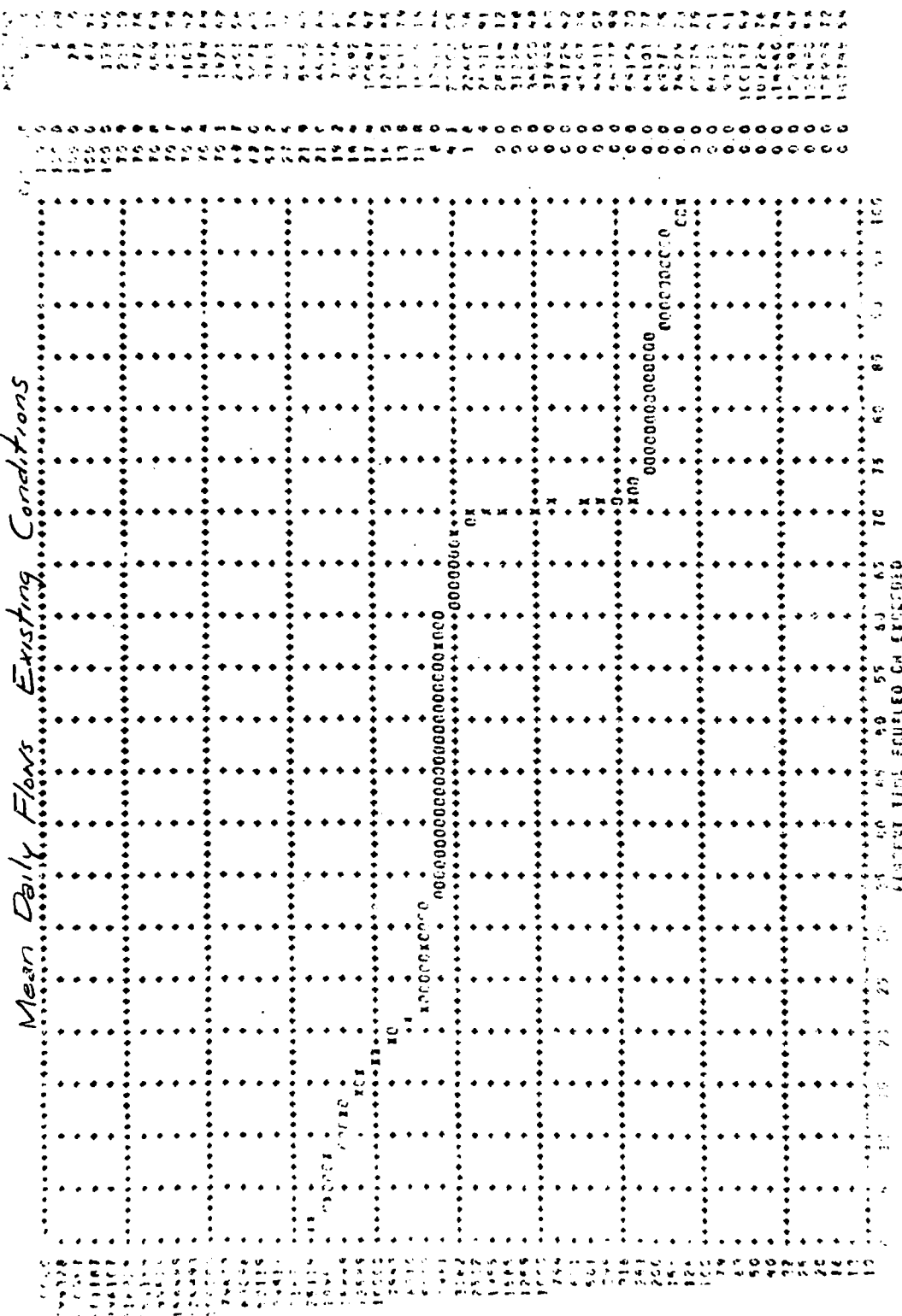
6-1 61174
NOV 24 4 17 PM '64
DUGAN 134

6-1 611242

Nov 21 1964

NOVEMBER 1955

Mean Daily Flows	Existing Conditions
100	100
200	200
300	300
400	400
500	500
600	600
700	700
800	800
900	900
1000	1000
1100	1100
1200	1200
1300	1300
1400	1400
1500	1500
1600	1600
1700	1700
1800	1800
1900	1900
2000	2000
2100	2100
2200	2200
2300	2300
2400	2400
2500	2500
2600	2600
2700	2700
2800	2800
2900	2900
3000	3000
3100	3100
3200	3200
3300	3300
3400	3400
3500	3500
3600	3600
3700	3700
3800	3800
3900	3900
4000	4000
4100	4100
4200	4200
4300	4300
4400	4400
4500	4500
4600	4600
4700	4700
4800	4800
4900	4900
5000	5000
5100	5100
5200	5200
5300	5300
5400	5400
5500	5500
5600	5600
5700	5700
5800	5800
5900	5900
6000	6000
6100	6100
6200	6200
6300	6300
6400	6400
6500	6500
6600	6600
6700	6700
6800	6800
6900	6900
7000	7000
7100	7100
7200	7200
7300	7300
7400	7400
7500	7500
7600	7600
7700	7700
7800	7800
7900	7900
8000	8000
8100	8100
8200	8200
8300	8300
8400	8400
8500	8500
8600	8600
8700	8700
8800	8800
8900	8900
9000	9000
9100	9100
9200	9200
9300	9300
9400	9400
9500	9500
9600	9600
9700	9700
9800	9800
9900	9900
10000	10000



Bull Shoals
R-1 FLOW
DECEMBER FLOW CURVE
Mean Daily Flows Existing Conditions

Flow (cfs)	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
10000																					
9000																					
8000																					
7000																					
6000																					
5000																					
4000																					
3000																					
2000																					
1000																					
500																					
250																					
100																					
50																					
25																					
10																					
5																					
2																					
1																					
0																					
10000																					
9000																					
8000																					
7000																					
6000																					
5000																					
4000																					
3000																					
2000																					
1000																					
500																					
250																					
100																					
50																					
25																					
10																					
5																					
2																					
1																					
0																					

Fig 15

Bull Shoals

1964-1965
January 1965

Natural Conditions

MDF

	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900
800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800
700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700
600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600
500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300
200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Fig 16

Bull Shog/s

W-1 PLUFFIN
PLUFFIN PLUFFIN

M.D.F. Natural Conditions

	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80
70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Fig 17

Bull Shqz/s

R-1 111P78M
APRIL 1963 DURATION

MDF Natural Conditions

	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
1000000	1000000	1000000	1000000	1000000	1000000	1000000	1000000	1000000	1000000	1000000	1000000	1000000	1000000	1000000	1000000	1000000	1000000	1000000	1000000	1000000	1000000
900000	900000	900000	900000	900000	900000	900000	900000	900000	900000	900000	900000	900000	900000	900000	900000	900000	900000	900000	900000	900000	900000
800000	800000	800000	800000	800000	800000	800000	800000	800000	800000	800000	800000	800000	800000	800000	800000	800000	800000	800000	800000	800000	800000
700000	700000	700000	700000	700000	700000	700000	700000	700000	700000	700000	700000	700000	700000	700000	700000	700000	700000	700000	700000	700000	700000
600000	600000	600000	600000	600000	600000	600000	600000	600000	600000	600000	600000	600000	600000	600000	600000	600000	600000	600000	600000	600000	600000
500000	500000	500000	500000	500000	500000	500000	500000	500000	500000	500000	500000	500000	500000	500000	500000	500000	500000	500000	500000	500000	500000
400000	400000	400000	400000	400000	400000	400000	400000	400000	400000	400000	400000	400000	400000	400000	400000	400000	400000	400000	400000	400000	400000
300000	300000	300000	300000	300000	300000	300000	300000	300000	300000	300000	300000	300000	300000	300000	300000	300000	300000	300000	300000	300000	300000
200000	200000	200000	200000	200000	200000	200000	200000	200000	200000	200000	200000	200000	200000	200000	200000	200000	200000	200000	200000	200000	200000
100000	100000	100000	100000	100000	100000	100000	100000	100000	100000	100000	100000	100000	100000	100000	100000	100000	100000	100000	100000	100000	100000
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Fig 19

Bull Shoals

R-1 FLIPSYN
MAY 1964 DURATION

MDF Natural Conditions

PERCENT TIME EQUALLED OR EXCEEDED	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
95	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
90	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
85	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
80	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
75	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
70	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
65	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
60	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
55	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
50	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
45	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
40	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
35	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
30	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
25	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
20	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
15	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
10	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
5	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Fig 20

11-11-88

Fig 23

RECEIVED

MDIF: Natural Conditions

MDI#	Natural	Conditions
10	0	0
11	0	0
12	0	0
13	0	0
14	0	0
15	0	0
16	0	0
17	0	0
18	0	0
19	0	0
20	0	0
21	0	0
22	0	0
23	0	0
24	0	0
25	0	0
26	0	0
27	0	0
28	0	0
29	0	0
30	0	0
31	0	0
32	0	0
33	0	0
34	0	0
35	0	0
36	0	0
37	0	0
38	0	0
39	0	0
40	0	0
41	0	0
42	0	0
43	0	0
44	0	0
45	0	0
46	0	0
47	0	0
48	0	0
49	0	0
50	0	0
51	0	0
52	0	0
53	0	0
54	0	0
55	0	0
56	0	0
57	0	0
58	0	0
59	0	0
60	0	0
61	0	0
62	0	0
63	0	0
64	0	0
65	0	0
66	0	0
67	0	0
68	0	0
69	0	0
70	0	0
71	0	0
72	0	0
73	0	0
74	0	0
75	0	0
76	0	0
77	0	0
78	0	0
79	0	0
80	0	0
81	0	0
82	0	0
83	0	0
84	0	0
85	0	0
86	0	0
87	0	0
88	0	0
89	0	0
90	0	0
91	0	0
92	0	0
93	0	0
94	0	0
95	0	0
96	0	0
97	0	0
98	0	0
99	0	0
100	0	0

Fig 24

CC-0 1144
CC-0 1144

MIDF: Natural Conditions

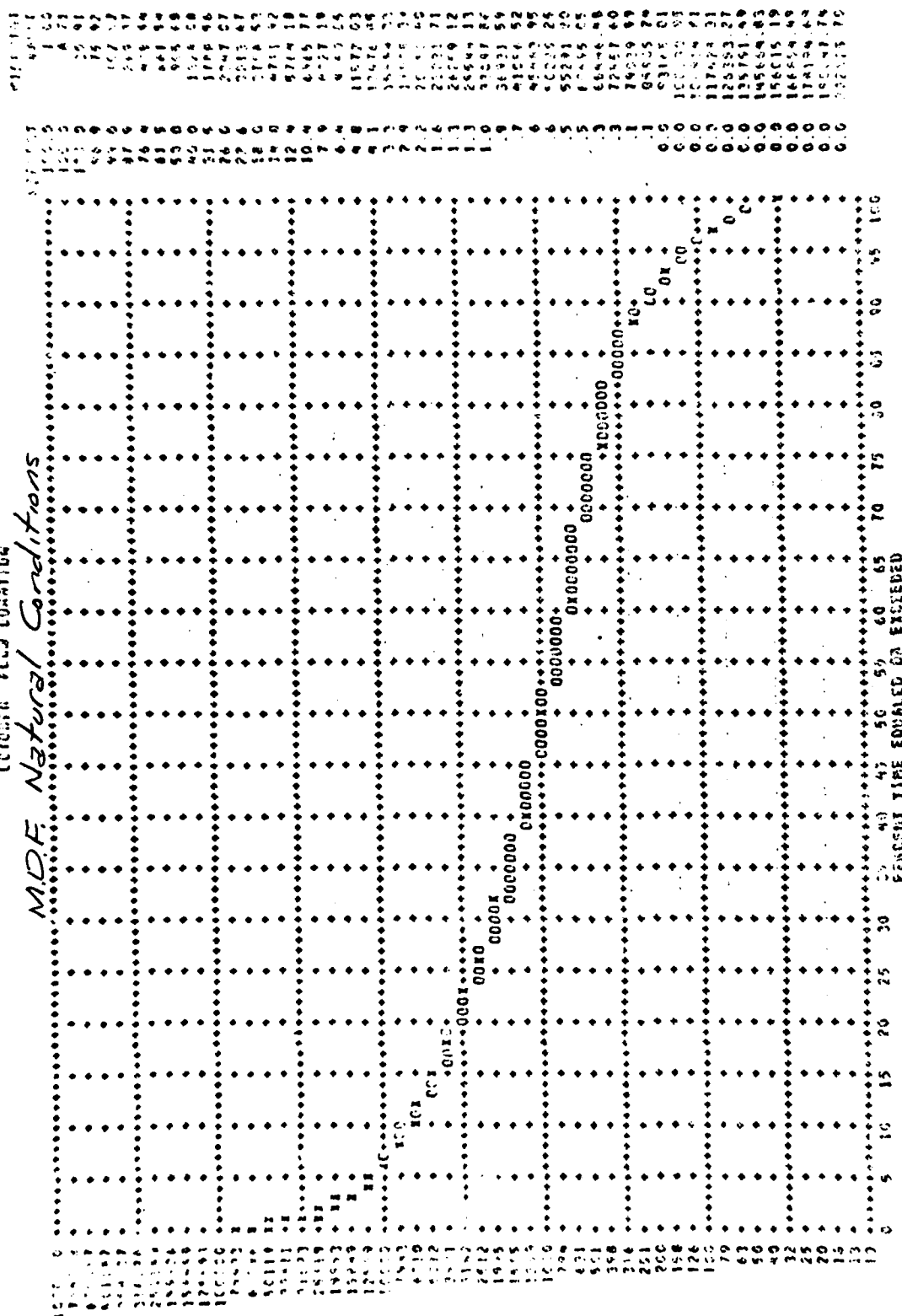


Fig 25

Bull Shoals

8-11 11/19/68
ADVERSE FLOOD SITUATION

M.D.F. Natural Conditions

	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
10																					
11																					
12																					
13																					
14																					
15																					
16																					
17																					
18																					
19																					
20																					
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100																					

Fig 26

1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378	2379	2380	2381	2382	2383	2384	2385	2386	2387	2388	2389	2390	2391	2392	2393	2394	2395	2396	2397	2398	2399	2400	2401	2402	2403
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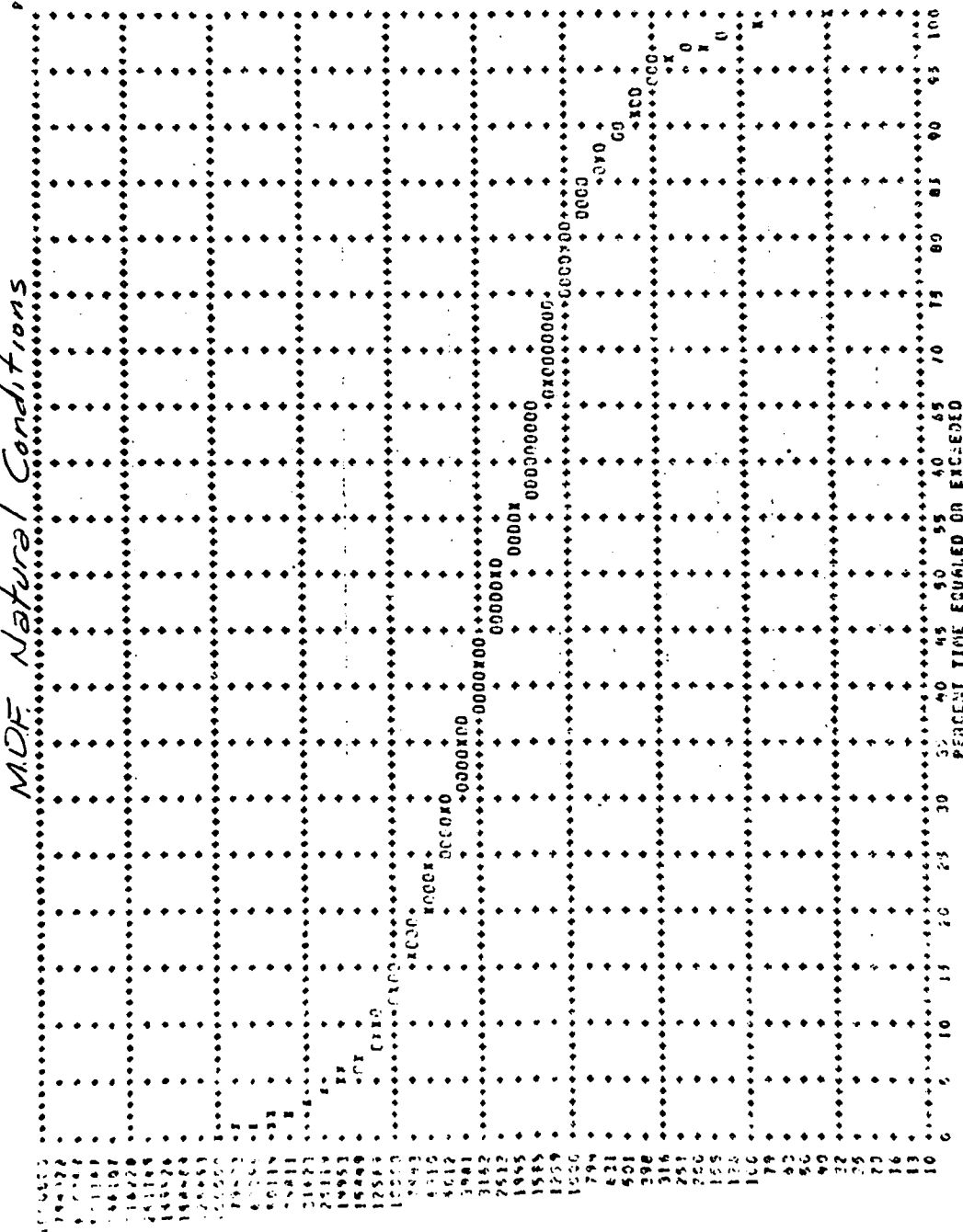


Fig 27

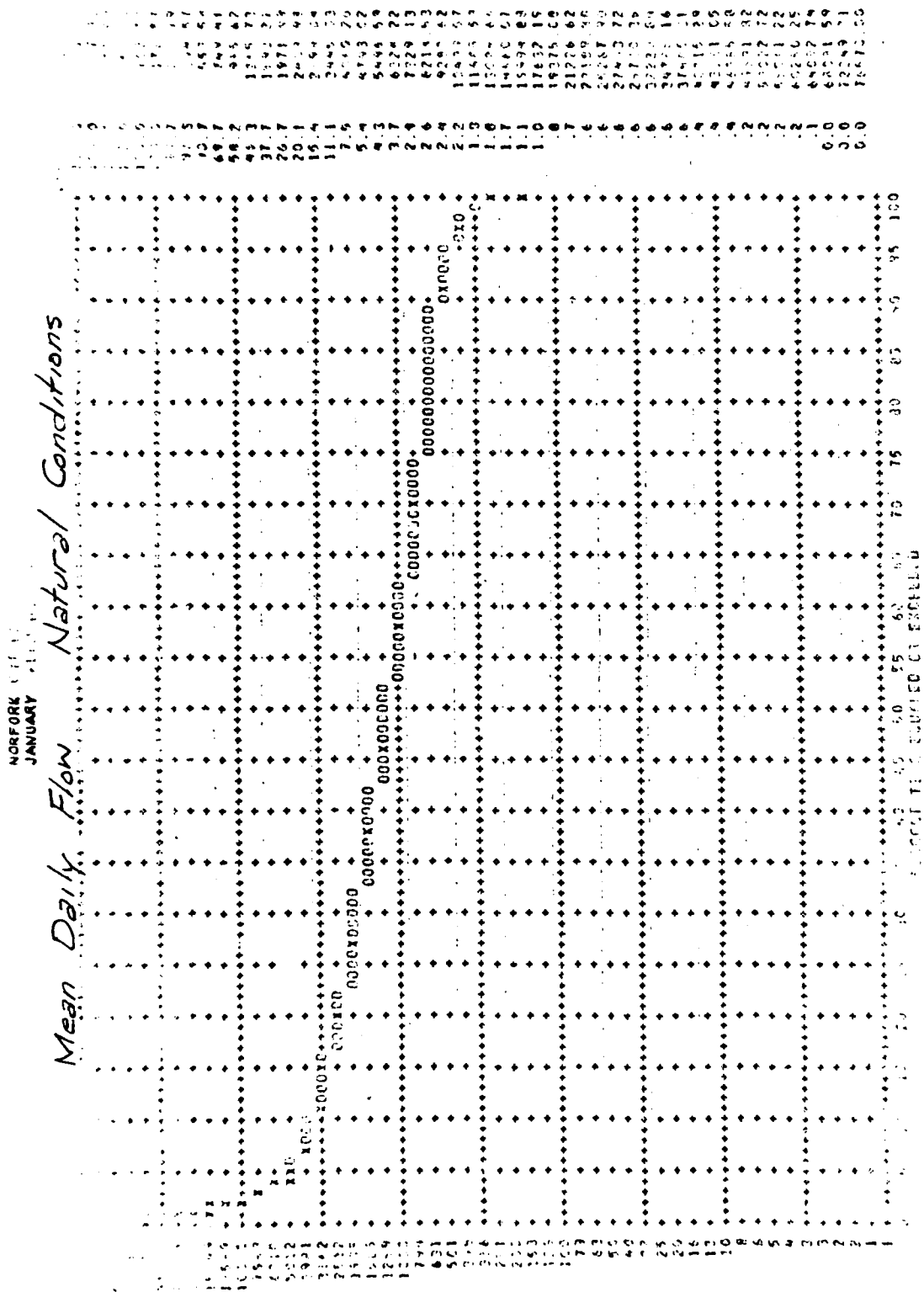
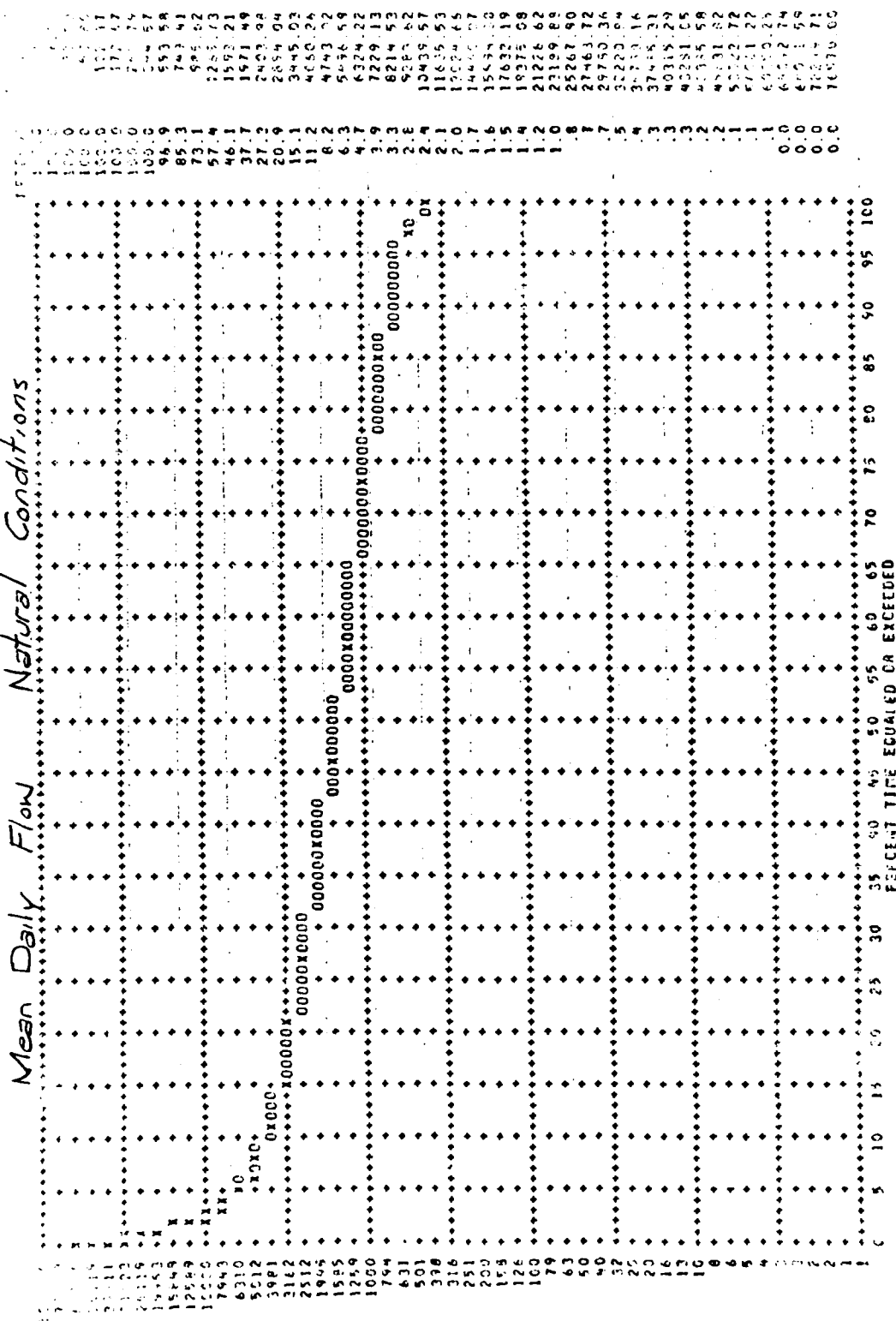


Fig. 4

APR 1968 10334
APR 1968 10334

Mean Daily Flow Natural Conditions



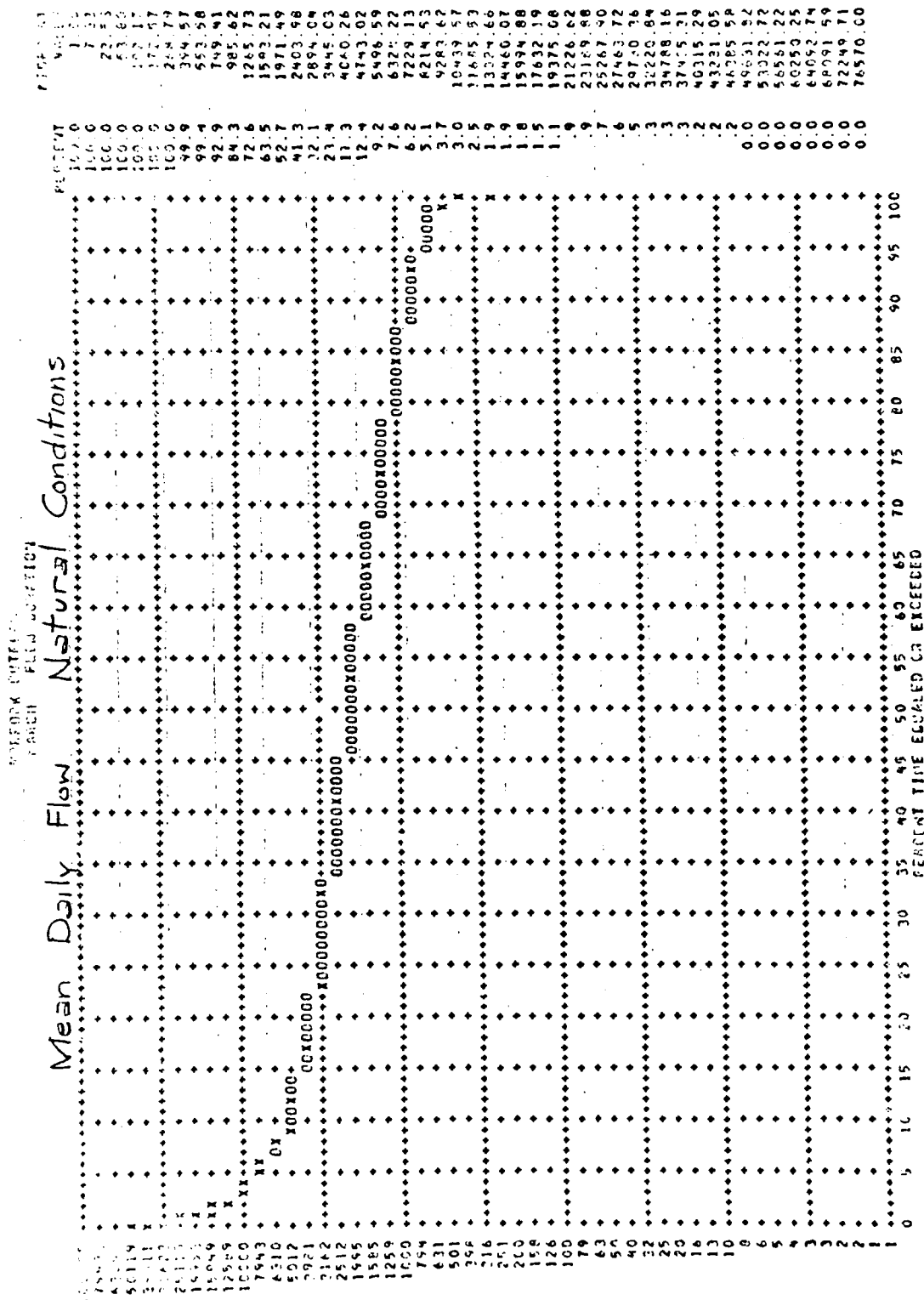


Fig. 6

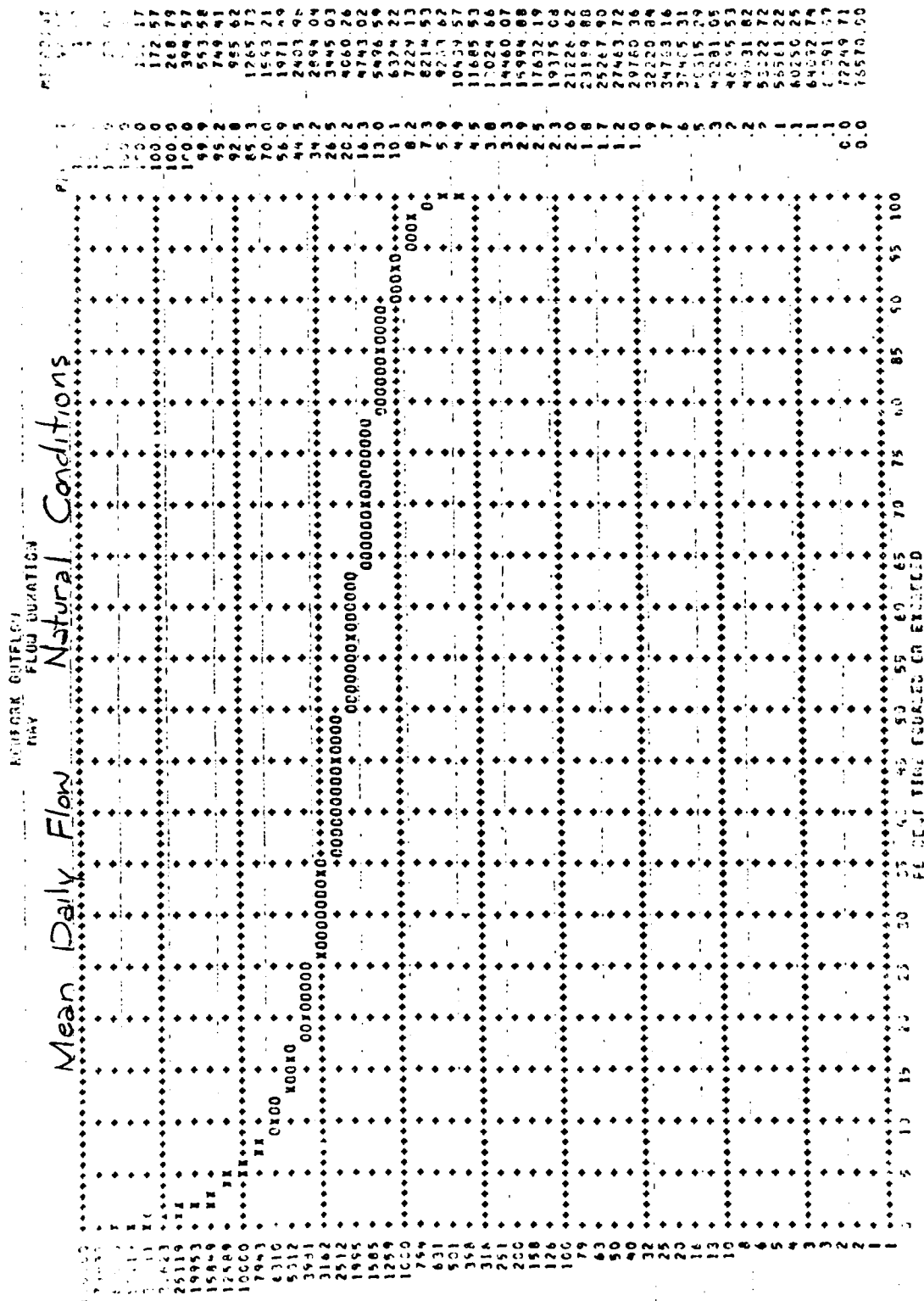


Fig. 8

WORKER CATEG
JUNE FLOW QUATION

3. 2

FLUX VARIATION

Mean Daily Flow Natural Conditions

[illegible]

INCREASED OUTFLOW
AUGUST FLOW DURATION

MOBILE FLOW CURTAIN

Mean Daily Flow Natural Conditions

[illegible]

KORFOR OUTFLOW
OCTOBER FLOW DURATION

Mean Daily Flow Natural Conditions

PERCENT	1	2	3	4	5	6	7	8	9	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000
7500	7500	7500	7500	7500	7500	7500	7500	7500	7500	7500	7500	7500	7500	7500	7500	7500	7500	7500	7500	7500	7500	7500	7500	7500	7500	7500	7500	7500
5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000
2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500
1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250
100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

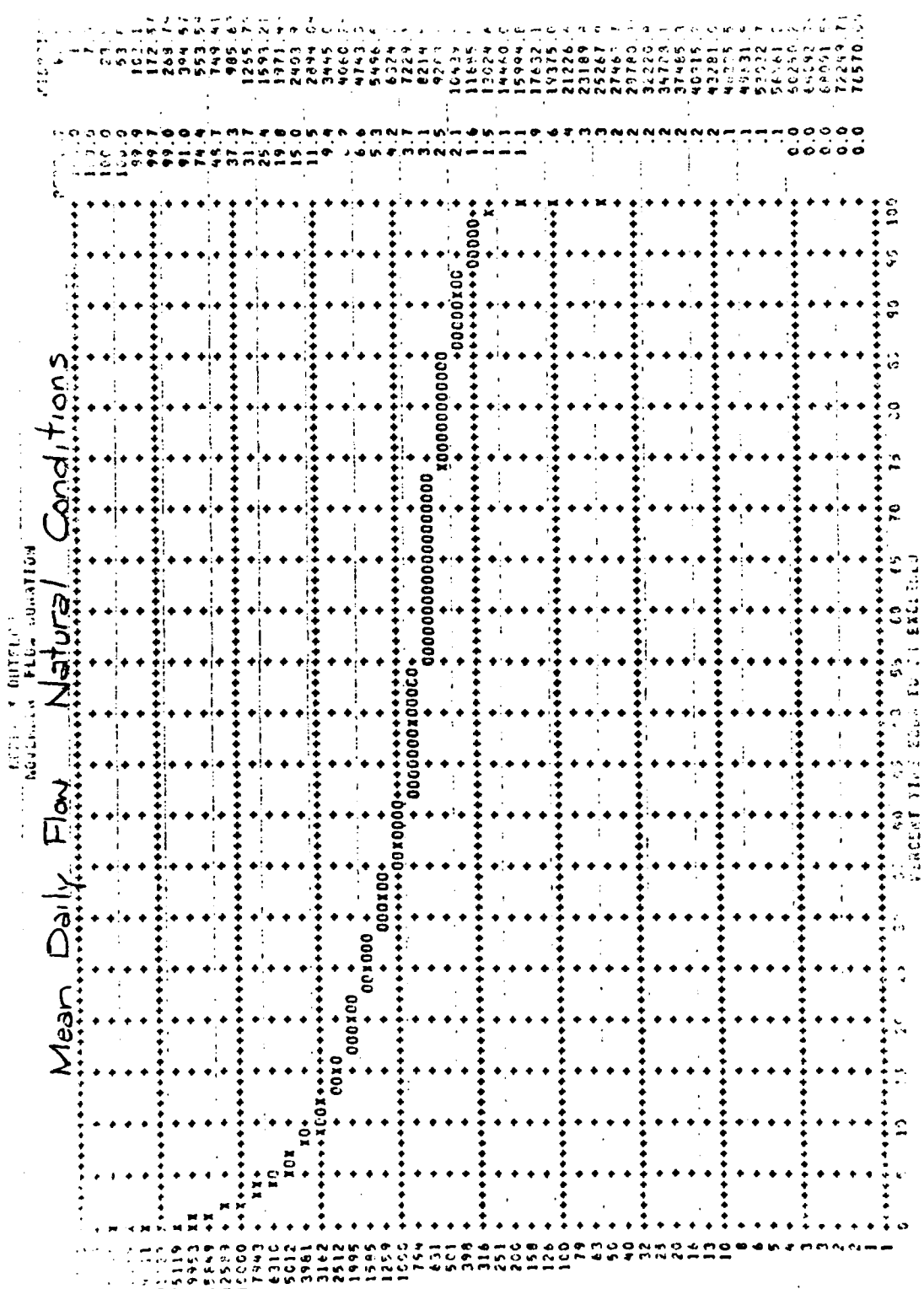


Fig. 14

PERFORM OUTFLOW		JANUARY FLOW DURATION		Existing Conditions		PERCENT	
Mean	Daily Flow	Existing	Conditions	PERCENT	PERCENT	PERCENT	PERCENT
10000	10000	10000	10000	10000	10000	10000	10000
7500	7500	7500	7500	7500	7500	7500	7500
5000	5000	5000	5000	5000	5000	5000	5000
2500	2500	2500	2500	2500	2500	2500	2500
1000	1000	1000	1000	1000	1000	1000	1000
500	500	500	500	500	500	500	500
250	250	250	250	250	250	250	250
100	100	100	100	100	100	100	100
50	50	50	50	50	50	50	50
25	25	25	25	25	25	25	25
10	10	10	10	10	10	10	10
5	5	5	5	5	5	5	5
2	2	2	2	2	2	2	2
1	1	1	1	1	1	1	1
0	0	0	0	0	0	0	0
10000	10000	10000	10000	10000	10000	10000	10000
7500	7500	7500	7500	7500	7500	7500	7500
5000	5000	5000	5000	5000	5000	5000	5000
2500	2500	2500	2500	2500	2500	2500	2500
1000	1000	1000	1000	1000	1000	1000	1000
500	500	500	500	500	500	500	500
250	250	250	250	250	250	250	250
100	100	100	100	100	100	100	100
50	50	50	50	50	50	50	50
25	25	25	25	25	25	25	25
10	10	10	10	10	10	10	10
5	5	5	5	5	5	5	5
2	2	2	2	2	2	2	2
1	1	1	1	1	1	1	1
0	0	0	0	0	0	0	0
10000	10000	10000	10000	10000	10000	10000	10000
7500	7500	7500	7500	7500	7500	7500	7500
5000	5000	5000	5000	5000	5000	5000	5000
2500	2500	2500	2500	2500	2500	2500	2500
1000	1000	1000	1000	1000	1000	1000	1000
500	500	500	500	500	500	500	500
250	250	250	250	250	250	250	250
100	100	100	100	100	100	100	100
50	50	50	50	50	50	50	50
25	25	25	25	25	25	25	25
10	10	10	10	10	10	10	10
5	5	5	5	5	5	5	5
2	2	2	2	2	2	2	2
1	1	1	1	1	1	1	1
0	0	0	0	0	0	0	0

Fig. 16

MOOREHEAD OUTFLOW
FEBRUARY FLOW DURATION

Mean Daily Flow	Existing Conditions	PERCENT TIME EXCEEDED
100000	100.0	0.0
79433	100.0	1.0
63064	100.0	5.0
50119	100.0	25.0
39811	100.0	50.0
31423	60.9	75.0
25119	59.4	85.0
19953	58.9	90.0
15849	58.4	95.0
12589	57.5	97.0
10000	55.9	98.0
7943	50.4	99.0
6310	40.6	100.0
5012	33.0	100.0
3981	25.7	100.0
3142	19.5	100.0
2512	16.2	100.0
1995	14.3	100.0
1586	13.5	100.0
1259	12.7	100.0
1000	10.9	100.0
794	10.4	100.0
631	7.7	100.0
501	6.6	100.0
398	5.4	100.0
316	4.3	100.0
251	3.3	100.0
199	2.2	100.0
158	2.2	100.0
126	1.1	100.0
100	0.0	100.0
79	0.0	100.0
63	0.0	100.0
50	0.0	100.0
40	0.0	100.0
32	0.0	100.0
25	0.0	100.0
20	0.0	100.0
16	0.0	100.0
13	0.0	100.0
10	0.0	100.0
8	0.0	100.0
6	0.0	100.0
5	0.0	100.0
4	0.0	100.0
3	0.0	100.0
2	0.0	100.0
1	0.0	100.0

Fig. 17

NORFOLK OUTFLOW		Existing Conditions		PERCENT	
MARCH		FLOW DURATION		MARCH	
Mean Daily Flow		Existing Conditions		PERCENT	
10000	10000	10000	10000	100.0	100.0
9500	9500	9500	9500	100.0	100.0
9000	9000	9000	9000	100.0	100.0
8500	8500	8500	8500	100.0	100.0
8000	8000	8000	8000	100.0	100.0
7500	7500	7500	7500	100.0	100.0
7000	7000	7000	7000	100.0	100.0
6500	6500	6500	6500	100.0	100.0
6000	6000	6000	6000	100.0	100.0
5500	5500	5500	5500	100.0	100.0
5000	5000	5000	5000	100.0	100.0
4500	4500	4500	4500	100.0	100.0
4000	4000	4000	4000	100.0	100.0
3500	3500	3500	3500	100.0	100.0
3000	3000	3000	3000	100.0	100.0
2500	2500	2500	2500	100.0	100.0
2000	2000	2000	2000	100.0	100.0
1500	1500	1500	1500	100.0	100.0
1000	1000	1000	1000	100.0	100.0
500	500	500	500	100.0	100.0
0	0	0	0	100.0	100.0
10000	10000	10000	10000	100.0	100.0
9500	9500	9500	9500	100.0	100.0
9000	9000	9000	9000	100.0	100.0
8500	8500	8500	8500	100.0	100.0
8000	8000	8000	8000	100.0	100.0
7500	7500	7500	7500	100.0	100.0
7000	7000	7000	7000	100.0	100.0
6500	6500	6500	6500	100.0	100.0
6000	6000	6000	6000	100.0	100.0
5500	5500	5500	5500	100.0	100.0
5000	5000	5000	5000	100.0	100.0
4500	4500	4500	4500	100.0	100.0
4000	4000	4000	4000	100.0	100.0
3500	3500	3500	3500	100.0	100.0
3000	3000	3000	3000	100.0	100.0
2500	2500	2500	2500	100.0	100.0
2000	2000	2000	2000	100.0	100.0
1500	1500	1500	1500	100.0	100.0
1000	1000	1000	1000	100.0	100.0
500	500	500	500	100.0	100.0
0	0	0	0	100.0	100.0
10000	10000	10000	10000	100.0	100.0
9500	9500	9500	9500	100.0	100.0
9000	9000	9000	9000	100.0	100.0
8500	8500	8500	8500	100.0	100.0
8000	8000	8000	8000	100.0	100.0
7500	7500	7500	7500	100.0	100.0
7000	7000	7000	7000	100.0	100.0
6500	6500	6500	6500	100.0	100.0
6000	6000	6000	6000	100.0	100.0
5500	5500	5500	5500	100.0	100.0
5000	5000	5000	5000	100.0	100.0
4500	4500	4500	4500	100.0	100.0
4000	4000	4000	4000	100.0	100.0
3500	3500	3500	3500	100.0	100.0
3000	3000	3000	3000	100.0	100.0
2500	2500	2500	2500	100.0	100.0
2000	2000	2000	2000	100.0	100.0
1500	1500	1500	1500	100.0	100.0
1000	1000	1000	1000	100.0	100.0
500	500	500	500	100.0	100.0
0	0	0	0	100.0	100.0

Fig. 18

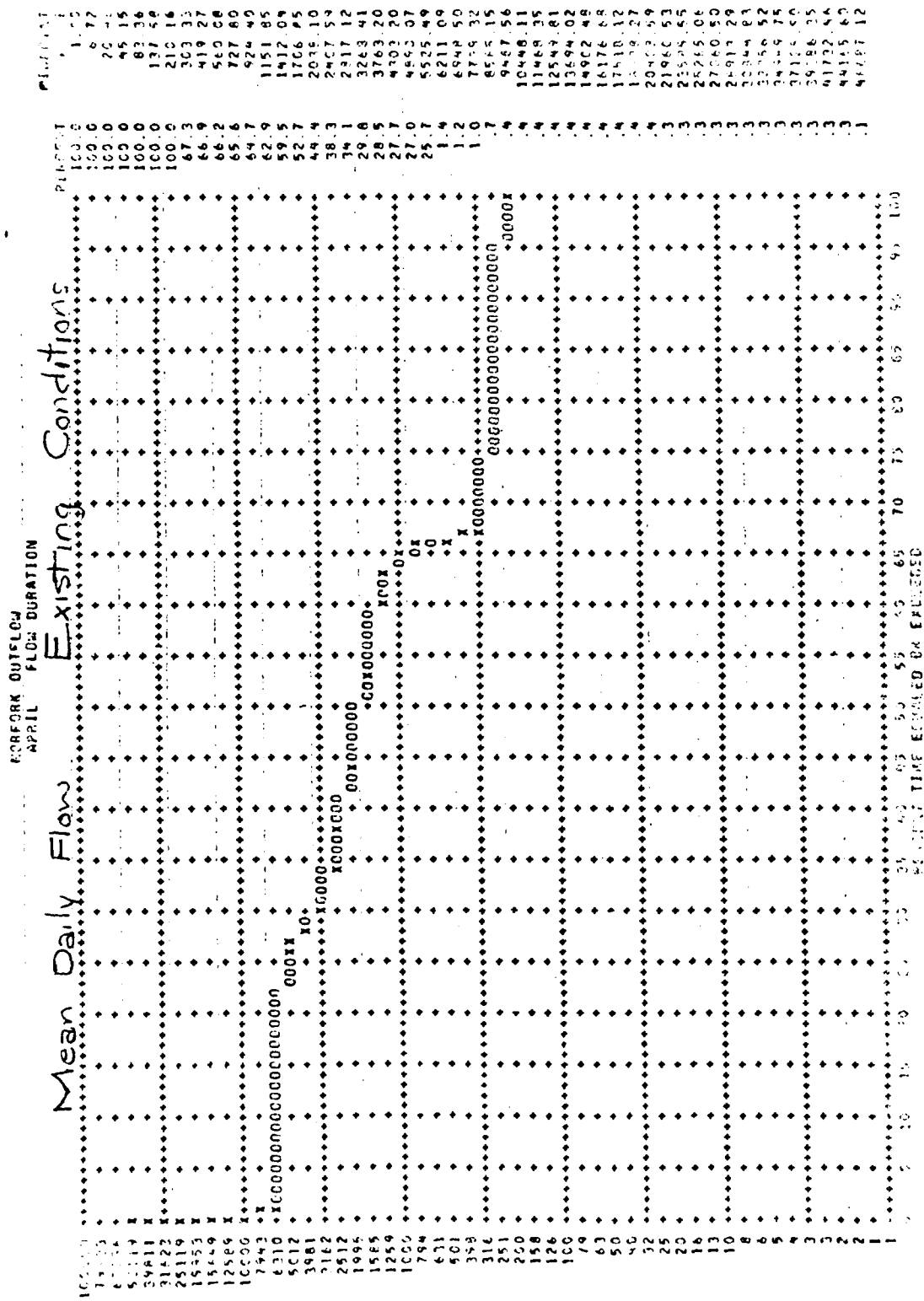


Fig. 19

NORFOLK OUTFLOWS
JUNE FLOW DURATION

Existing Conditions

Mean Daily Flow

Flow (cfs)	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
15000																					
14000																					
13000																					
12000																					
11000																					
10000																					
9000																					
8000																					
7000																					
6000																					
5000																					
4000																					
3000																					
2000																					
1500																					
1000																					
500																					
0																					

Fig. 21

FORECAST OUTLOOK
JULY FLOW DURATION

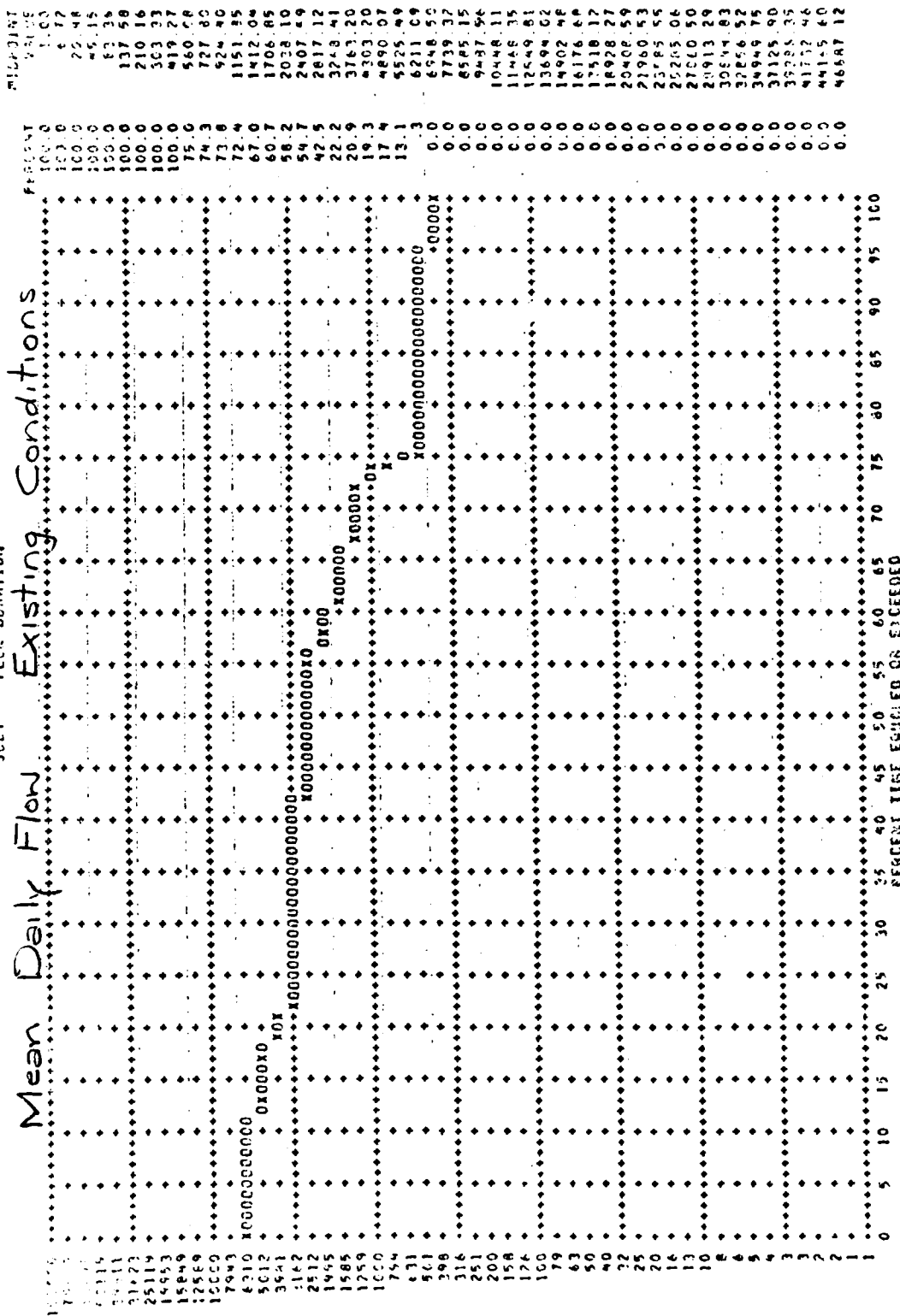


Fig. 22

Mean	Daily Flow	Existing Flow Duration	Existing Conditions
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[illegible]

030333Z 00 037503 3414 1N30235
09 09 55 44 04 35

PROPERTY OFFICE
RECEIVED JULY 1946

Mean Daily Flow Existing Conditions

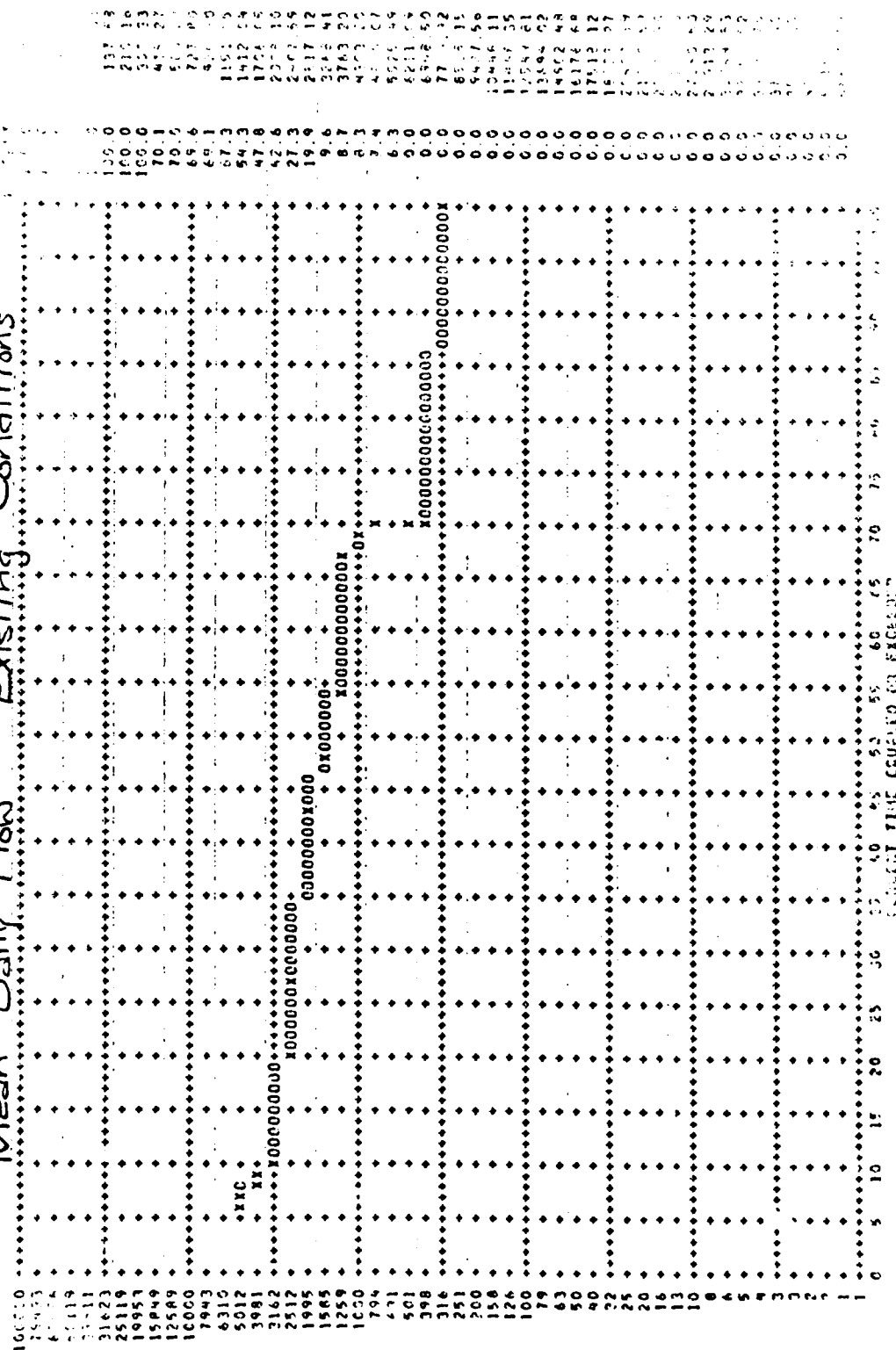


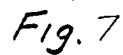
Fig. 24

COPIES TO: 0000000000
FOIA(b) 7E000000

Mean Daily Flow Existing Conditions

Mean Daily Flow	Existing Conditions
10000	10000
15000	15000
20000	20000
25000	25000
30000	30000
35000	35000
40000	40000
45000	45000
50000	50000
55000	55000
60000	60000
65000	65000
70000	70000
75000	75000
80000	80000
85000	85000
90000	90000
95000	95000
100000	100000
105000	105000
110000	110000
115000	115000
120000	120000
125000	125000
130000	130000
135000	135000
140000	140000
145000	145000
150000	150000
155000	155000
160000	160000
165000	165000
170000	170000
175000	175000
180000	180000
185000	185000
190000	190000
195000	195000
200000	200000
205000	205000
210000	210000
215000	215000
220000	220000
225000	225000
230000	230000
235000	235000
240000	240000
245000	245000
250000	250000
255000	255000
260000	260000
265000	265000
270000	270000
275000	275000
280000	280000
285000	285000
290000	290000
295000	295000
300000	300000
305000	305000
310000	310000
315000	315000
320000	320000
325000	325000
330000	330000
335000	335000
340000	340000
345000	345000
350000	350000
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370000	370000
375000	375000
380000	380000
385000	385000
390000	390000
395000	395000
400000	400000
405000	405000
410000	410000
415000	415000
420000	420000
425000	425000
430000	430000
435000	435000
440000	440000
445000	445000
450000	450000
455000	455000
460000	460000
465000	465000
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475000	475000
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495000	495000
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660000	660000
665000	665000
670000	670000
675000	675000
680000	680000
685000	685000
690000	690000
695000	695000
700000	700000
705000	705000
710000	710000
715000	715000
720000	720000
725000	725000
730000	730000
735000	735000
740000	740000
745000	745000
750000	750000
755000	755000
760000	760000
765000	





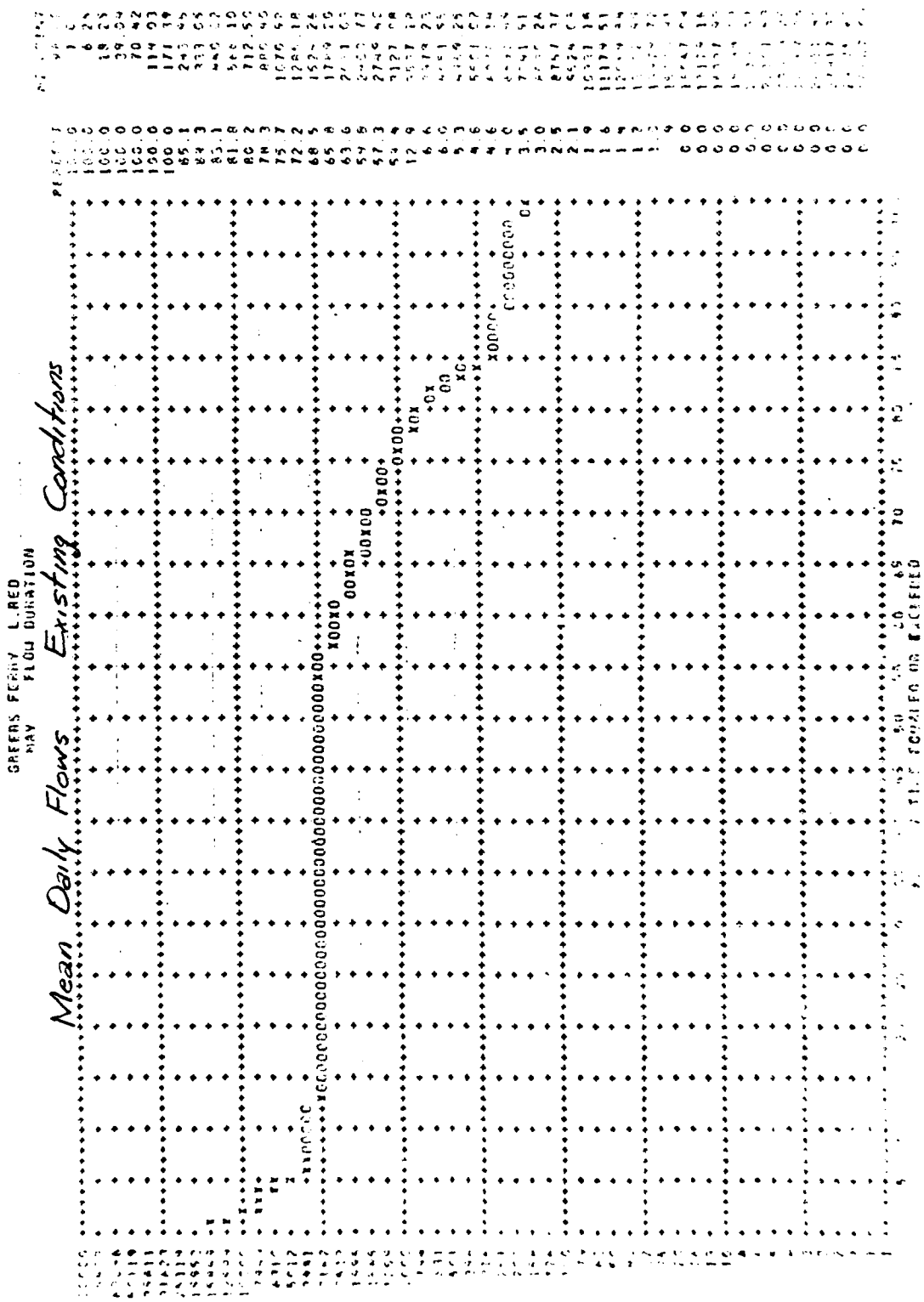


Fig. 8

Mean	Daily	Flows	Existing	Conditions
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[illegible]

Fig. 10

CROOKS FIFTH LINED
SEPIEREN FLOW DURATION

Mean Daily Flows Existing Conditions

PERCENT	VALUE
100.0	1.00
95.0	1.05
90.0	1.10
85.0	1.15
80.0	1.20
75.0	1.25
70.0	1.30
65.0	1.35
60.0	1.40
55.0	1.45
50.0	1.50
45.0	1.55
40.0	1.60
35.0	1.65
30.0	1.70
25.0	1.75
20.0	1.80
15.0	1.85
10.0	1.90
5.0	1.95
0.0	2.00
0.0	2.05
0.0	2.10
0.0	2.15
0.0	2.20
0.0	2.25
0.0	2.30
0.0	2.35
0.0	2.40
0.0	2.45
0.0	2.50
0.0	2.55
0.0	2.60
0.0	2.65
0.0	2.70
0.0	2.75
0.0	2.80
0.0	2.85
0.0	2.90
0.0	2.95
0.0	3.00
0.0	3.05
0.0	3.10
0.0	3.15
0.0	3.20
0.0	3.25
0.0	3.30
0.0	3.35
0.0	3.40
0.0	3.45
0.0	3.50
0.0	3.55
0.0	3.60
0.0	3.65
0.0	3.70
0.0	3.75
0.0	3.80
0.0	3.85
0.0	3.90
0.0	3.95
0.0	4.00
0.0	4.05
0.0	4.10
0.0	4.15
0.0	4.20
0.0	4.25
0.0	4.30
0.0	4.35
0.0	4.40
0.0	4.45
0.0	4.50
0.0	4.55
0.0	4.60
0.0	4.65
0.0	4.70
0.0	4.75
0.0	4.80
0.0	4.85
0.0	4.90
0.0	4.95
0.0	5.00
0.0	5.05
0.0	5.10
0.0	5.15
0.0	5.20
0.0	5.25
0.0	5.30
0.0	5.35
0.0	5.40
0.0	5.45
0.0	5.50
0.0	5.55
0.0	5.60
0.0	5.65
0.0	5.70
0.0	5.75
0.0	5.80
0.0	5.85
0.0	5.90
0.0	5.95
0.0	6.00
0.0	6.05
0.0	6.10
0.0	6.15
0.0	6.20
0.0	6.25
0.0	6.30
0.0	6.35
0.0	6.40
0.0	6.45
0.0	6.50
0.0	6.55
0.0	6.60
0.0	6.65
0.0	6.70
0.0	6.75
0.0	6.80
0.0	6.85
0.0	6.90
0.0	6.95
0.0	7.00
0.0	7.05
0.0	7.10
0.0	7.15
0.0	7.20
0.0	7.25
0.0	7.30
0.0	7.35
0.0	7.40
0.0	7.45
0.0	7.50
0.0	7.55
0.0	7.60
0.0	7.65
0.0	7.70
0.0	7.75
0.0	7.80
0.0	7.85
0.0	7.90
0.0	7.95
0.0	8.00
0.0	8.05
0.0	8.10
0.0	8.15
0.0	8.20
0.0	8.25
0.0	8.30
0.0	8.35
0.0	8.40
0.0	8.45
0.0	8.50
0.0	8.55
0.0	8.60
0.0	8.65
0.0	8.70
0.0	8.75
0.0	8.80
0.0	8.85
0.0	8.90
0.0	8.95
0.0	9.00
0.0	9.05
0.0	9.10
0.0	9.15
0.0	9.20
0.0	9.25
0.0	9.30
0.0	9.35
0.0	9.40
0.0	9.45
0.0	9.50
0.0	9.55
0.0	9.60
0.0	9.65
0.0	9.70
0.0	9.75
0.0	9.80
0.0	9.85
0.0	9.90
0.0	9.95
0.0	10.00

Fig. 12

[illegible]

Mean Daily Flows Existing Conditions

Station	Mean Daily Flows	Existing Conditions	Proposed
10000			
75000			
60000			
50000			
40000			
30000			
20000			
10000			
5000			
2500			
1000			
500			
250			
100			
50			
25			
10			
5			
2.5			
1			
0.5			
0.25			
0.1			
0.05			
0.025			
0.01			
0.005			
0.0025			
0.001			
0.0005			
0.00025			
0.0001			
0.00005			
0.000025			
0.00001			
0.000005			
0.0000025			
0.000001			
0.0000005			
0.00000025			
0.0000001			
0.00000005			
0.000000025			
0.00000001			
0.000000005			
0.0000000025			
0.000000001			
0.0000000005			
0.00000000025			
0.0000000001			
0.00000000005			
0.000000000025			
0.00000000001			
0.000000000005			
0.0000000000025			
0.000000000001			
0.0000000000005			
0.00000000000025			
0.0000000000001			
0.00000000000005			
0.000000000000025			
0.00000000000001			
0.000000000000005			
0.0000000000000025			
0.000000000000001			
0.0000000000000005			
0.00000000000000025			
0.0000000000000001			
0.00000000000000005			
0.000000000000000025			
0.00000000000000001			
0.000000000000000005			
0.0000000000000000025			
0.000000000000000001			
0.0000000000000000005			
0.00000000000000000025			
0.0000000000000000001			
0.00000000000000000005			
0.000000000000000000025			
0.00000000000000000001			
0.000000000000000000005			
0.0000000000000000000025			
0.000000000000000000001			
0.0000000000000000000005			
0.00000000000000000000025			
0.0000000000000000000001			
0.00000000000000000000005			
0.000000000000000000000025			
0.00000000000000000000001			
0.000000000000000000000005			
0.0000000000000000000000025			
0.000000000000000000000001			
0.0000000000000000000000005			
0.00000000000000000000000025			
0.0000000000000000000000001			
0.00000000000000000000000005			
0.000000000000000000000000025			
0.00000000000000000000000001			
0.000000000000000000000000005			
0.0000000000000000000000000025			
0.000000000000000000000000001			
0.0000000000000000000000000005			
0.00000000000000000000000000025			
0.0000000000000000000000000001			
0.00000000000000000000000000005			
0.000000000000000000000000000025			
0.00000000000000000000000000001			
0.000000000000000000000000000005			
0.0000000000000000000000000000025			

Fig. 13

EXISTING FERRY LANE
AVERAGE FLOW DURATION

Mean Daily Flows Existing Conditions

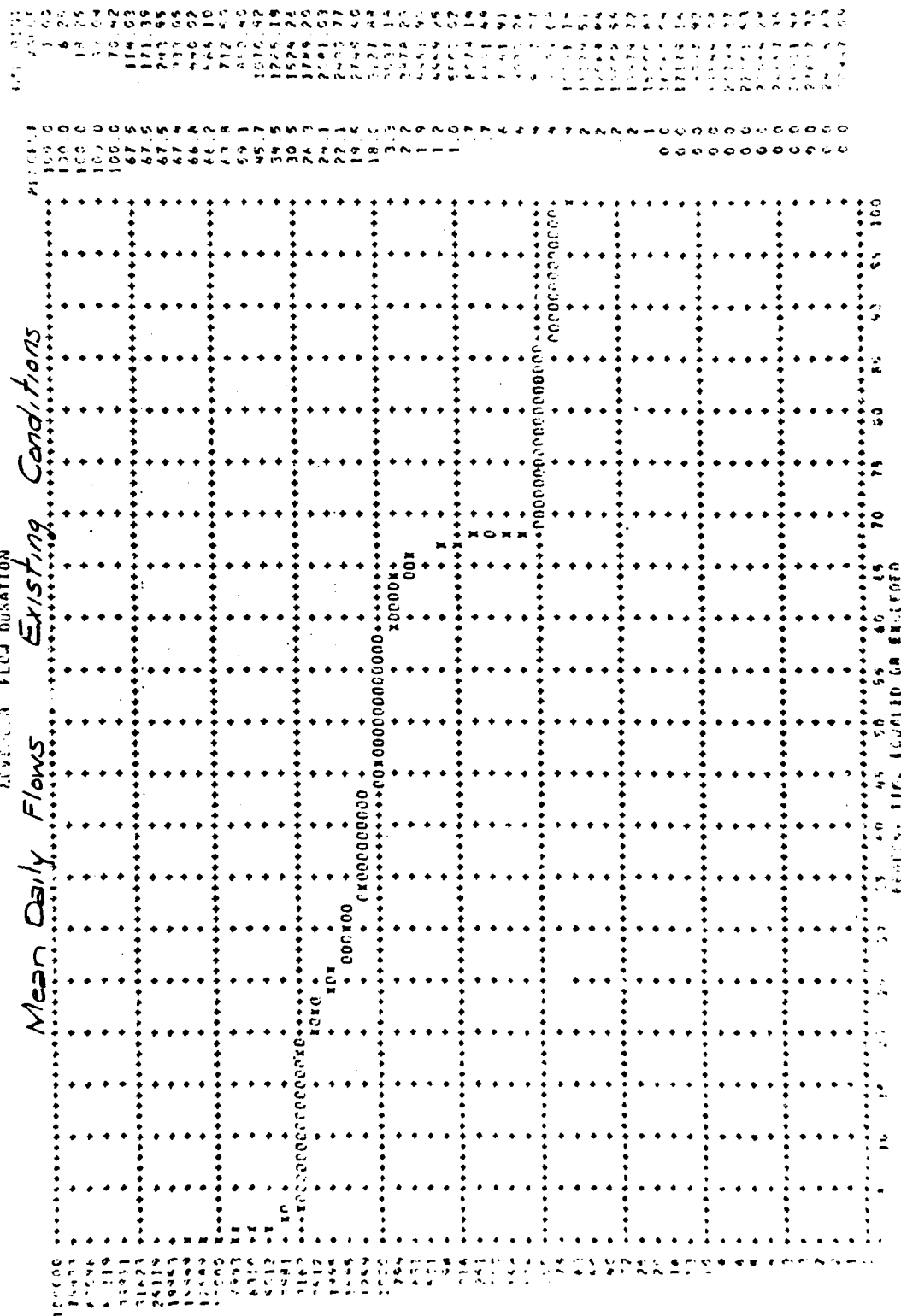


Fig. 14

MEAN DAILY FLOWS

EXISTING CONDITIONS

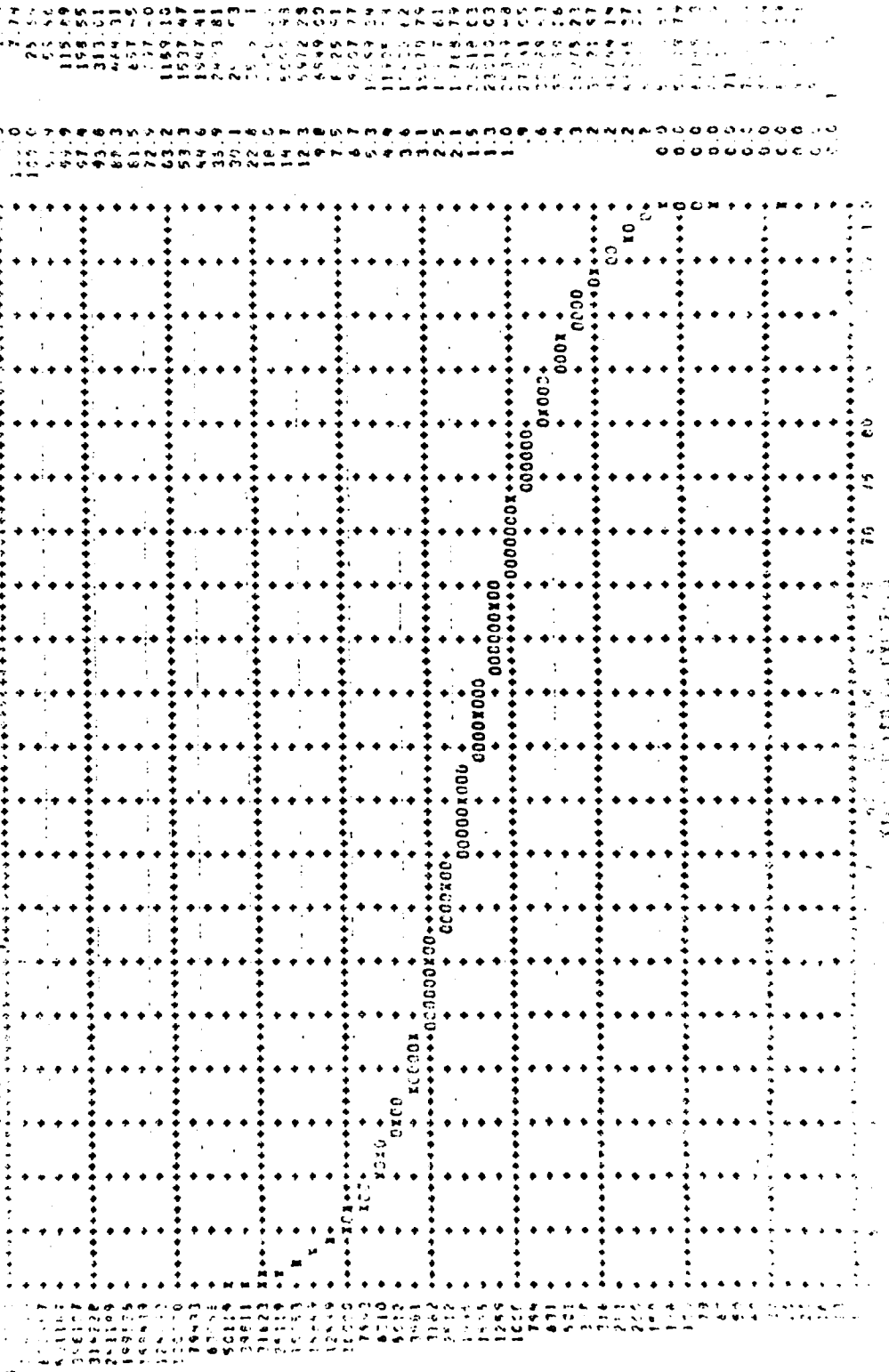
MEAN DAILY FLOWS	EXISTING CONDITIONS	PERCENT TIME EQUALLED OR EXCEEDED
10000	10000	100
11000	11000	95
12000	12000	90
13000	13000	85
14000	14000	80
15000	15000	75
16000	16000	70
17000	17000	65
18000	18000	60
19000	19000	55
20000	20000	50
21000	21000	45
22000	22000	40
23000	23000	35
24000	24000	30
25000	25000	25
26000	26000	20
27000	27000	15
28000	28000	10
29000	29000	5
30000	30000	0
31000	31000	0
32000	32000	0
33000	33000	0
34000	34000	0
35000	35000	0
36000	36000	0
37000	37000	0
38000	38000	0
39000	39000	0
40000	40000	0
41000	41000	0
42000	42000	0
43000	43000	0
44000	44000	0
45000	45000	0
46000	46000	0
47000	47000	0
48000	48000	0
49000	49000	0
50000	50000	0
51000	51000	0
52000	52000	0
53000	53000	0
54000	54000	0
55000	55000	0
56000	56000	0
57000	57000	0
58000	58000	0
59000	59000	0
60000	60000	0
61000	61000	0
62000	62000	0
63000	63000	0
64000	64000	0
65000	65000	0
66000	66000	0
67000	67000	0
68000	68000	0
69000	69000	0
70000	70000	0
71000	71000	0
72000	72000	0
73000	73000	0
74000	74000	0
75000	75000	0
76000	76000	0
77000	77000	0
78000	78000	0
79000	79000	0
80000	80000	0
81000	81000	0
82000	82000	0
83000	83000	0
84000	84000	0
85000	85000	0
86000	86000	0
87000	87000	0
88000	88000	0
89000	89000	0
90000	90000	0
91000	91000	0
92000	92000	0
93000	93000	0
94000	94000	0
95000	95000	0
96000	96000	0
97000	97000	0
98000	98000	0
99000	99000	0
100000	100000	0

Fig. 15

[illegible]

THE UNIVERSITY OF CHICAGO

Mean Daily Flows



Mean Daily Flows Natural Conditions

[illegible]

69-03-1003 JUL 1 1969

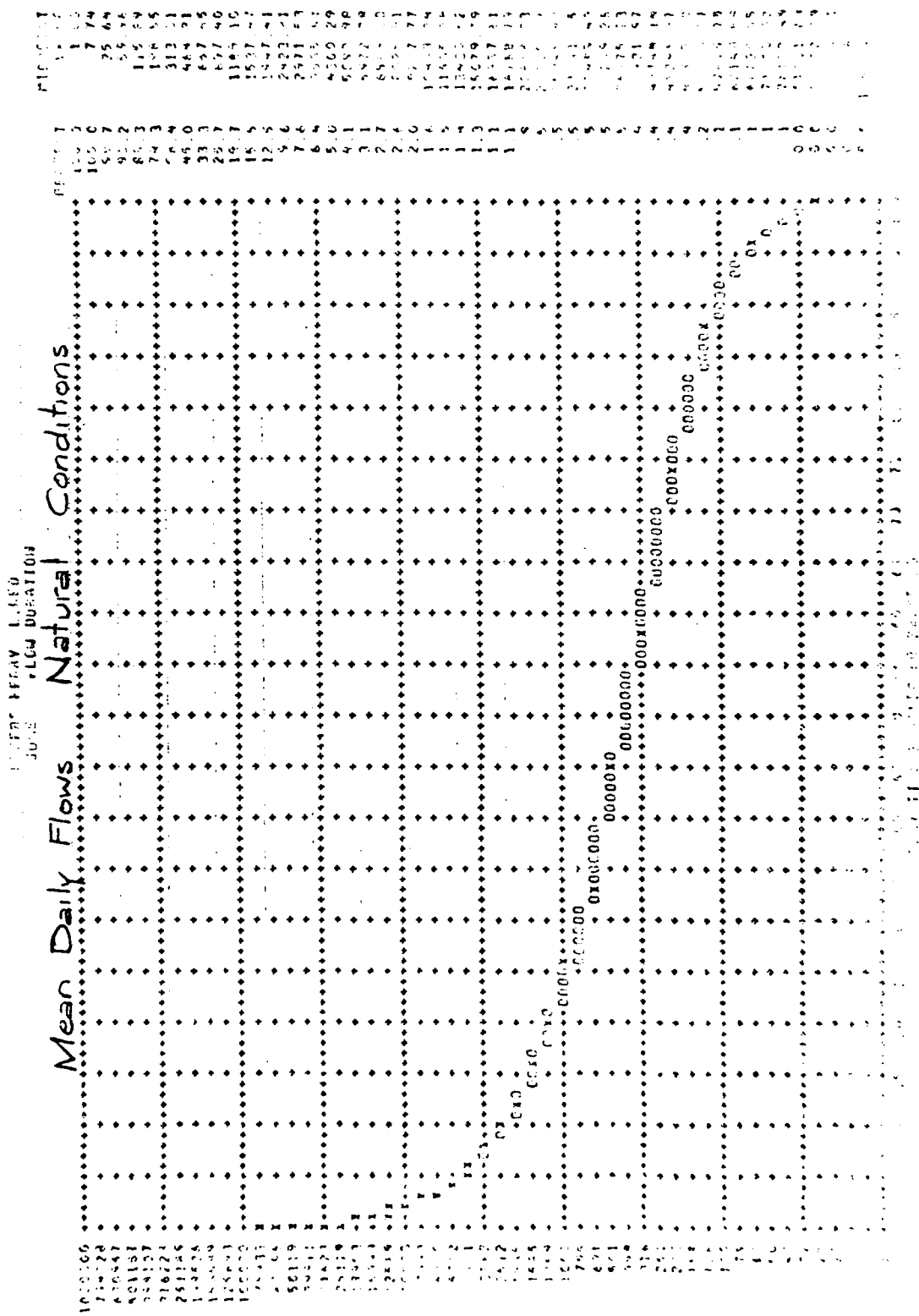


Fig. 21

STATION 45 FERRY L. BOD
JULY JULY

Mean Daily Flows Natural Conditions

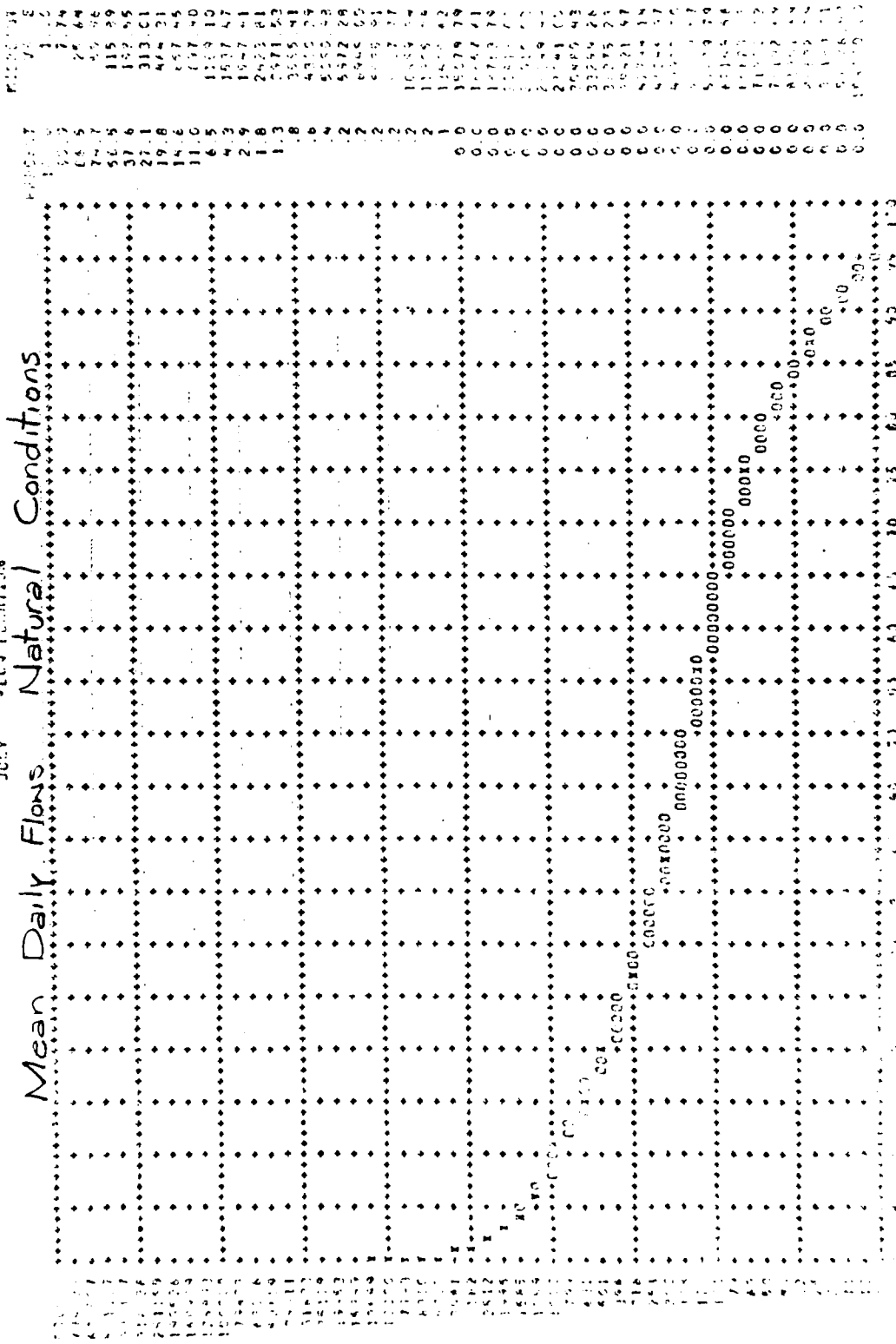


Fig 22

Mean Daily Flows Natural Conditions

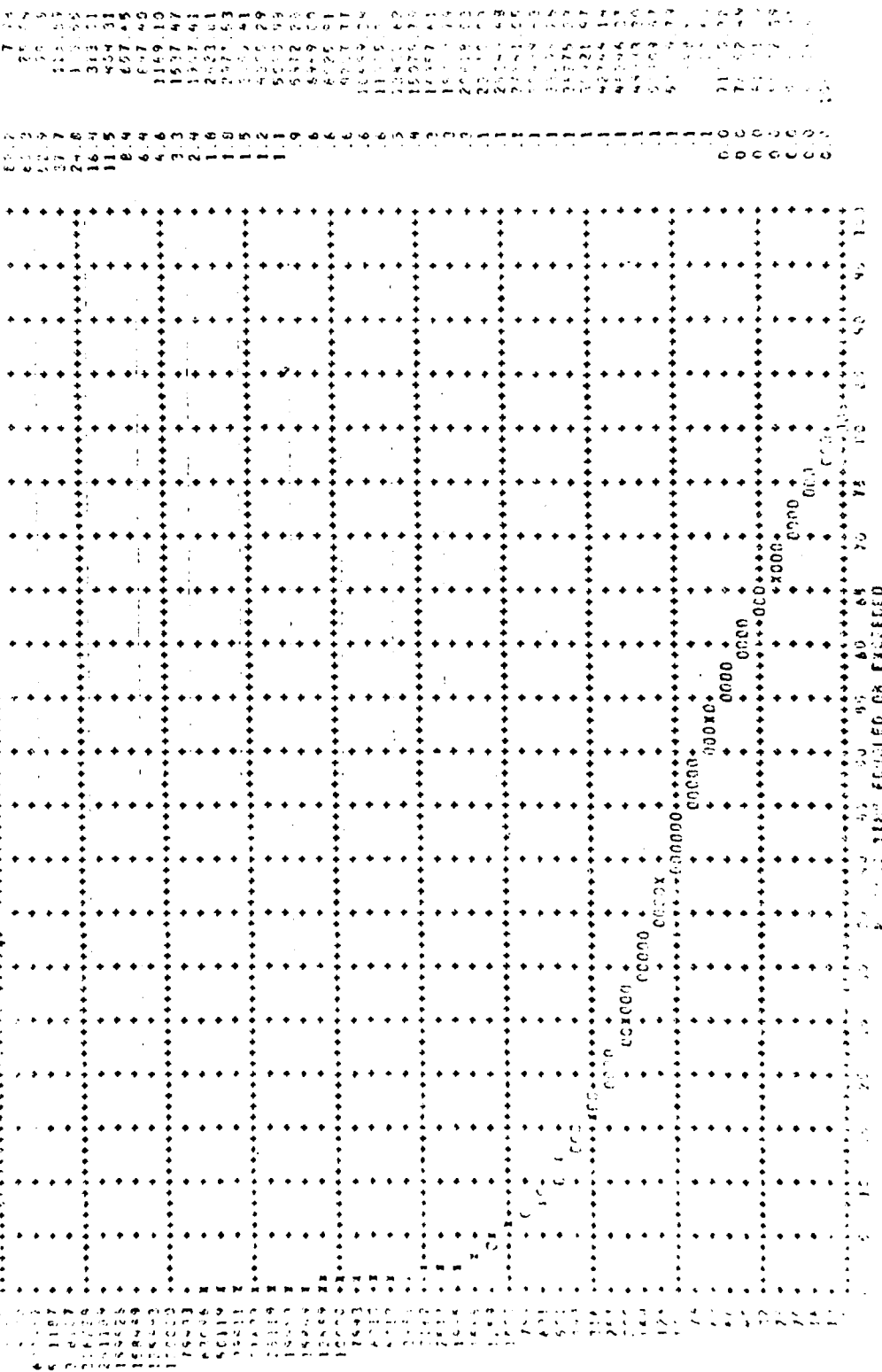


Fig. 25

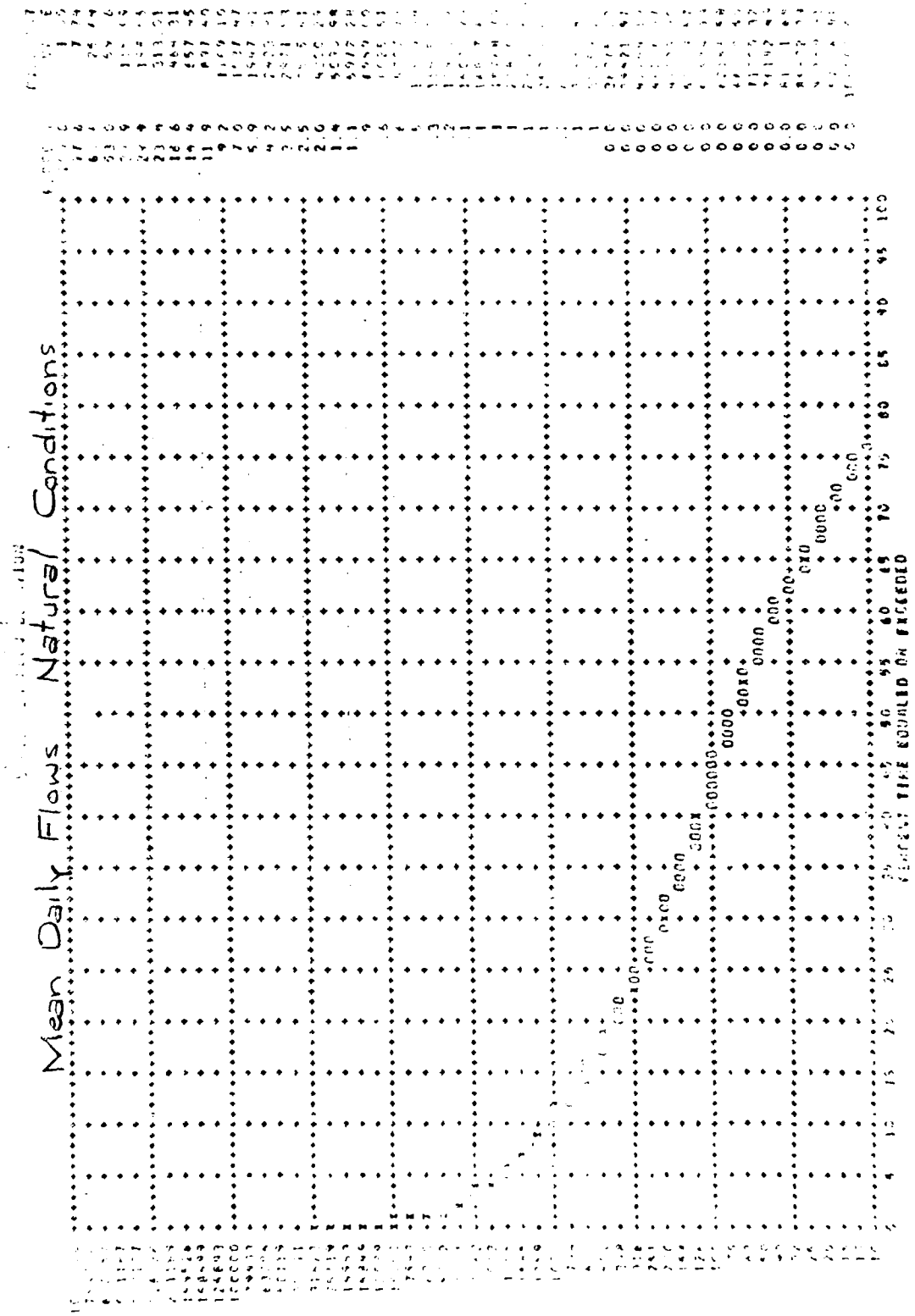


Fig. 24

OFFERS FROM L.F.E.D.
OCTOBER FLOW DURATION

Mean Daily Flows Natural Conditions

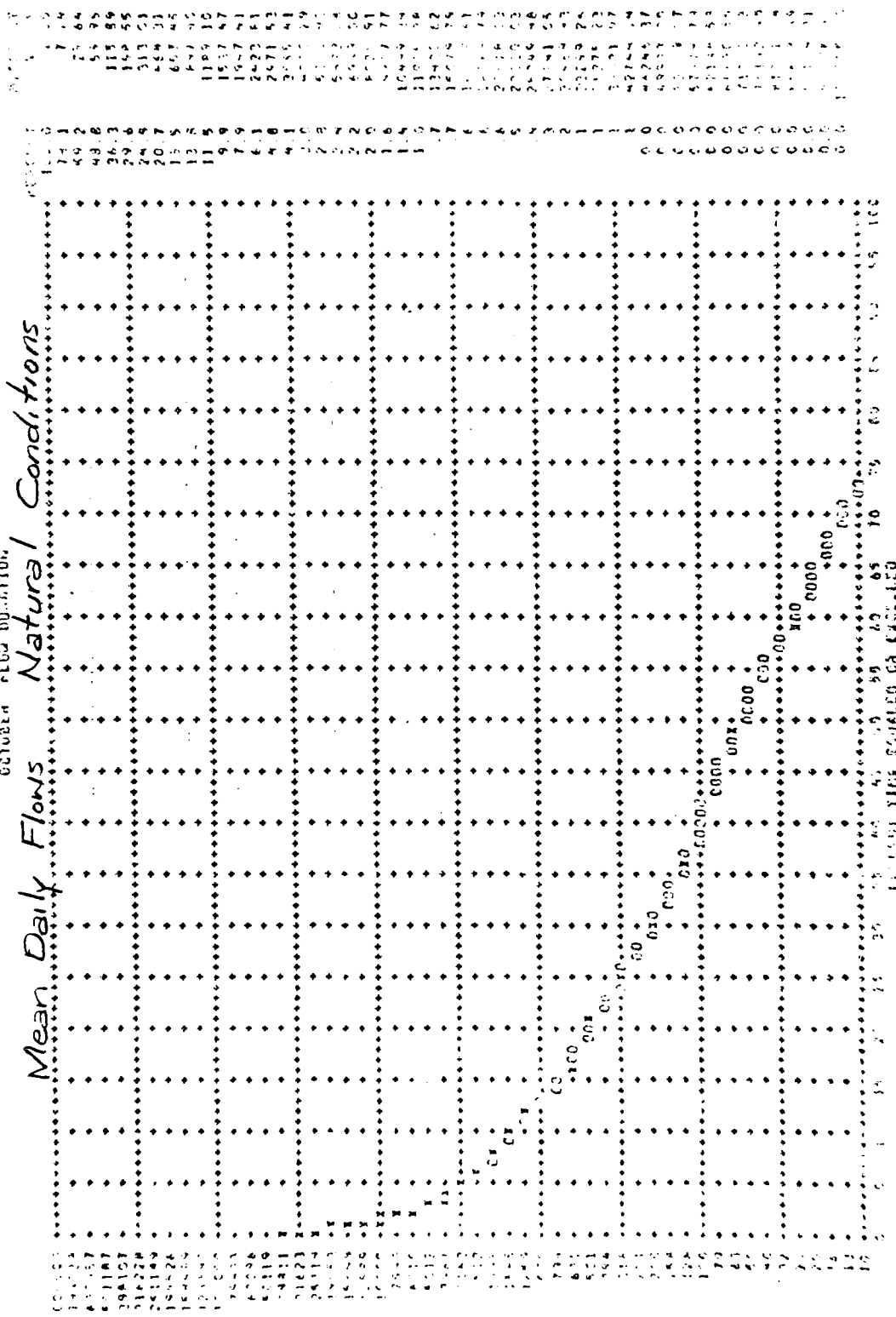


Fig 25

San Joaquin River
Bathymetric Chart

Mean Daily Flows Natural Conditions

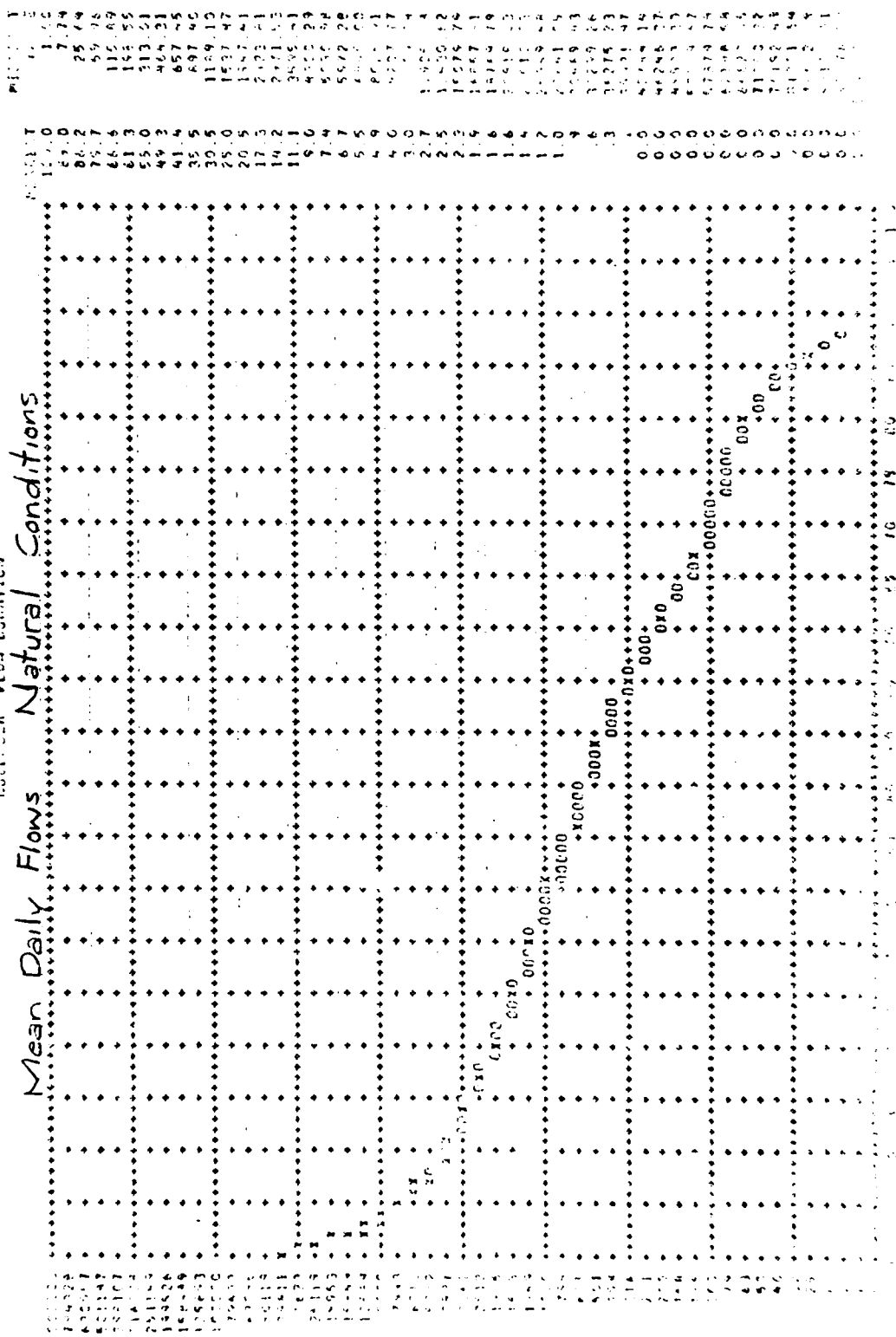


Fig. 26

0.15 0.0000 1.0000
 0.0000 1.0000 0.0000

Mean Daily Flows Natural Conditions

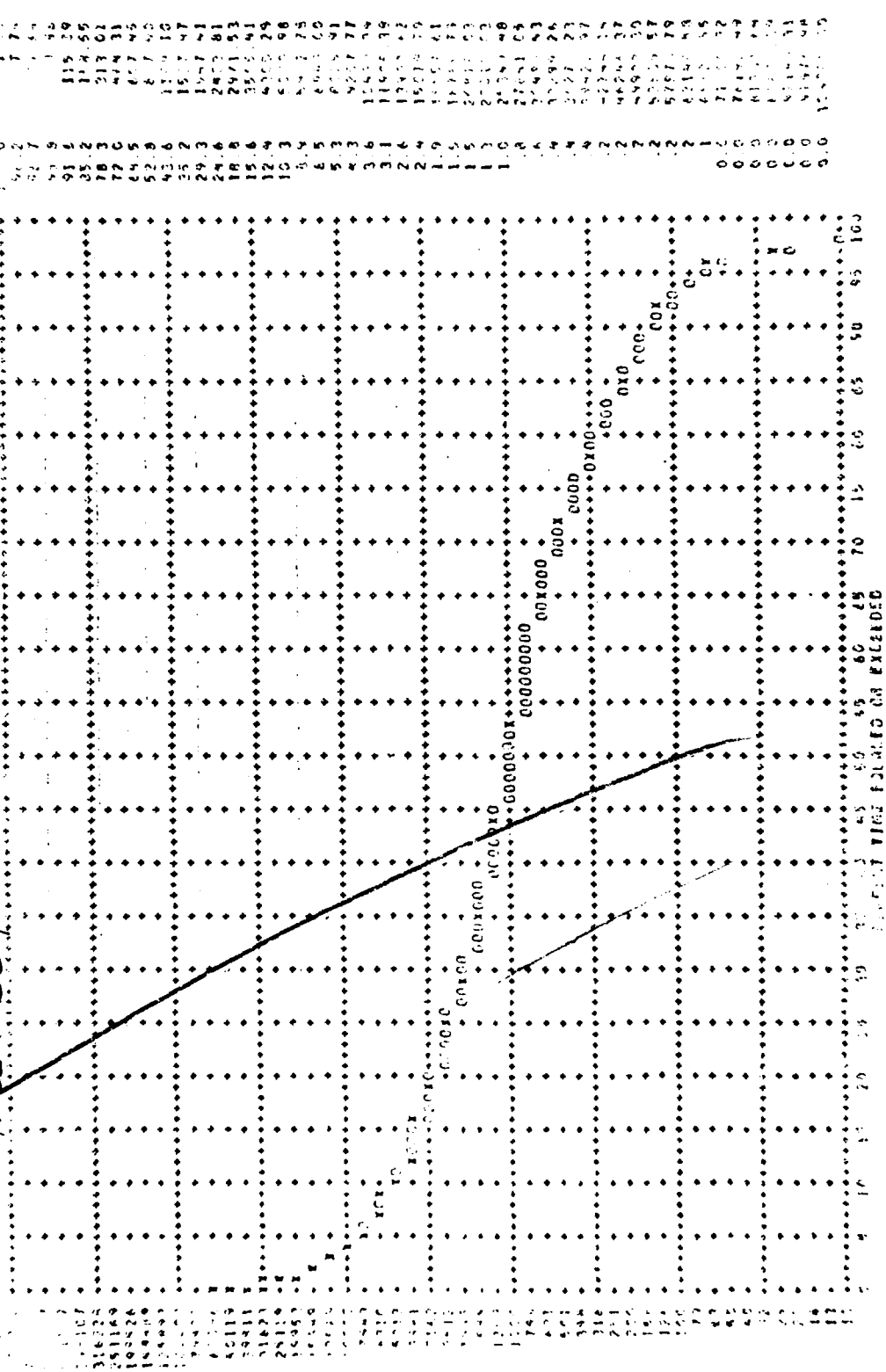
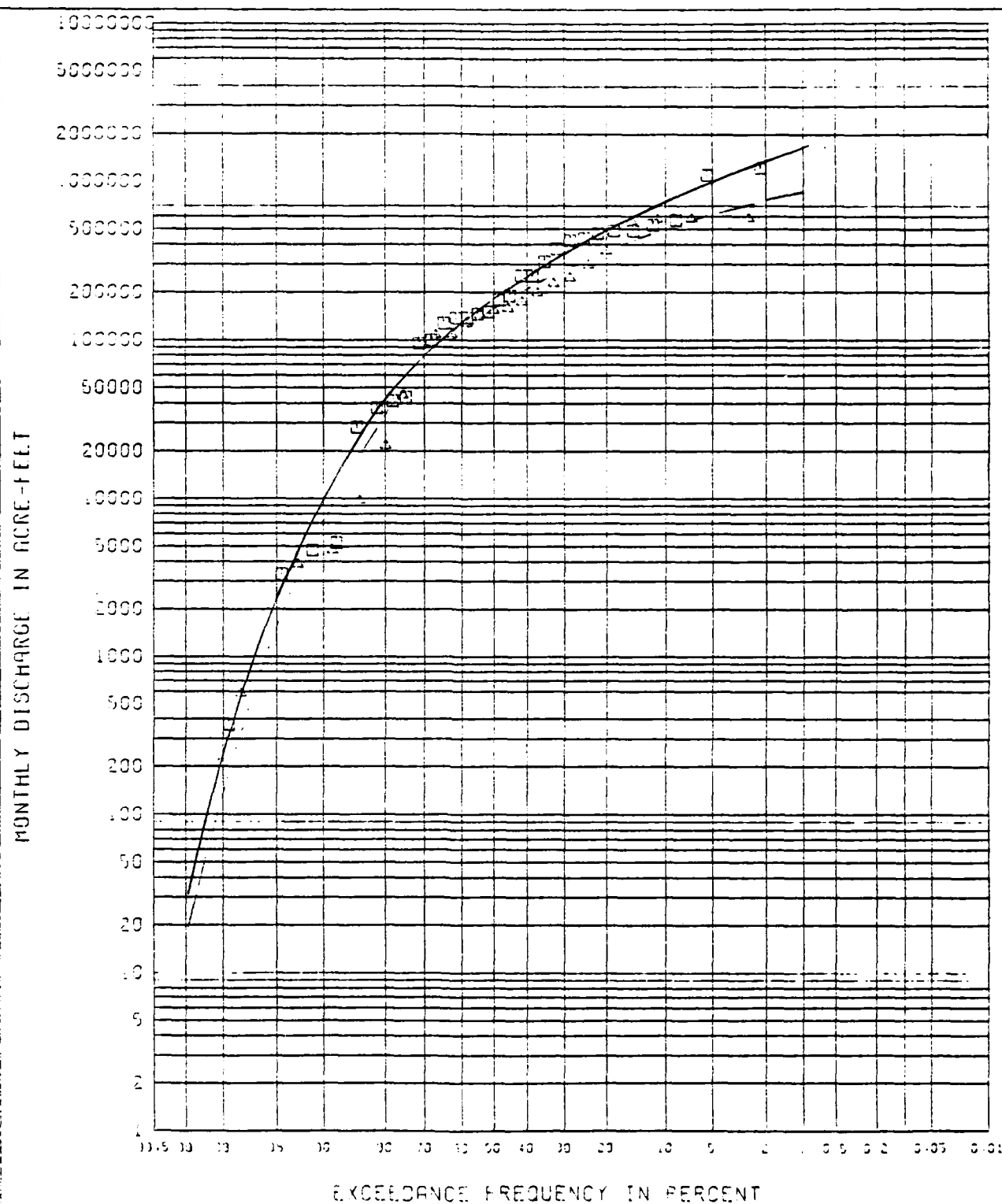


Fig. 27



LEGEND

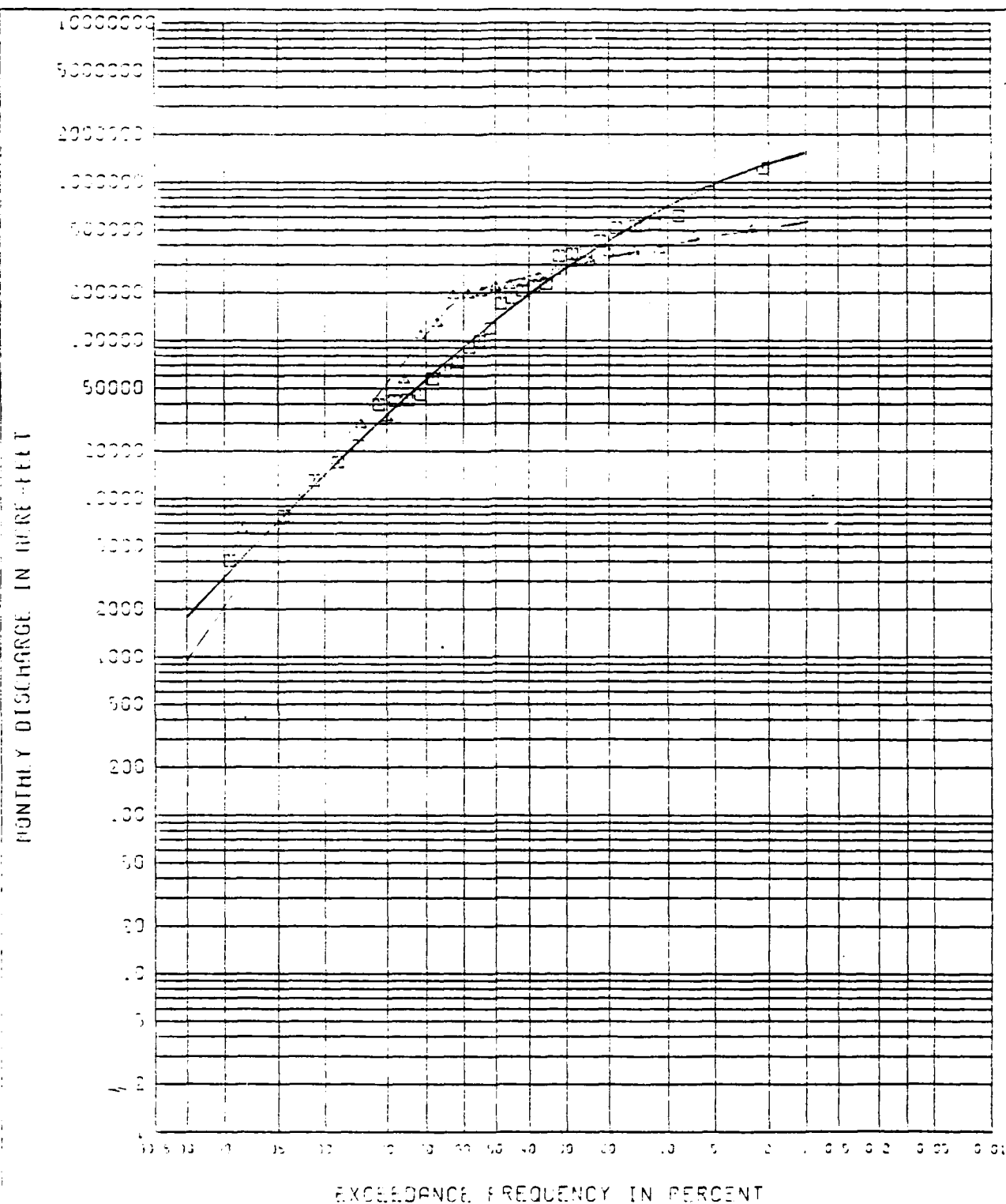
— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1923-1953)

— POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1957-1973)

SULPHUR RIVER BASIN, TEXAS
WRIGHT PATMAN LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
JANUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE I



LEGEND

—■— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1923-1953)

-▲- POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1957-1973)

SULPHUR RIVER BASIN, TEXAS

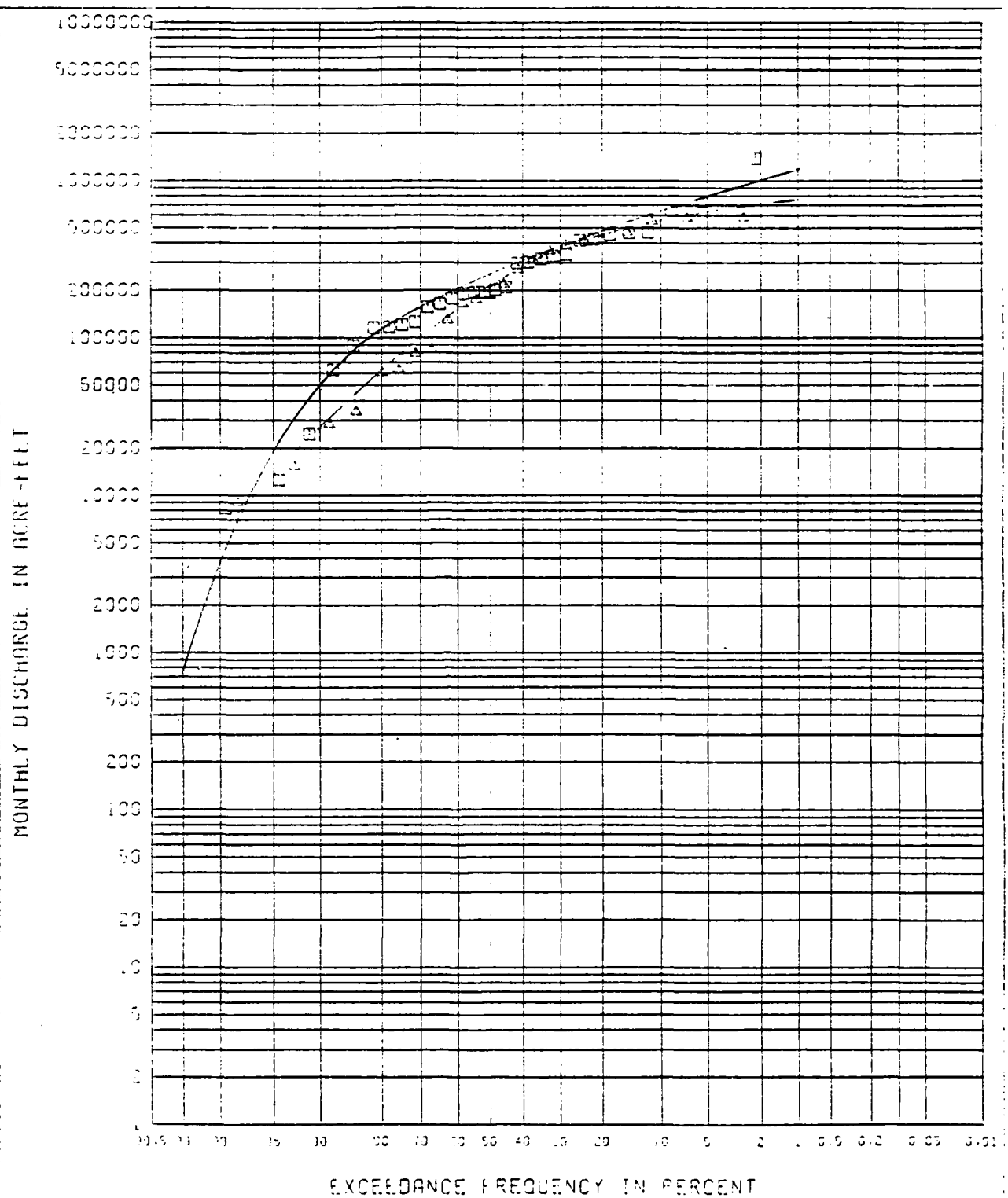
WRIGHT PATMAN LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

FEBRUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 2



LEGEND

—■— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1923-1953)

- - -△- POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1957-1973)

SULPHUR RIVER BASIN, TEXAS

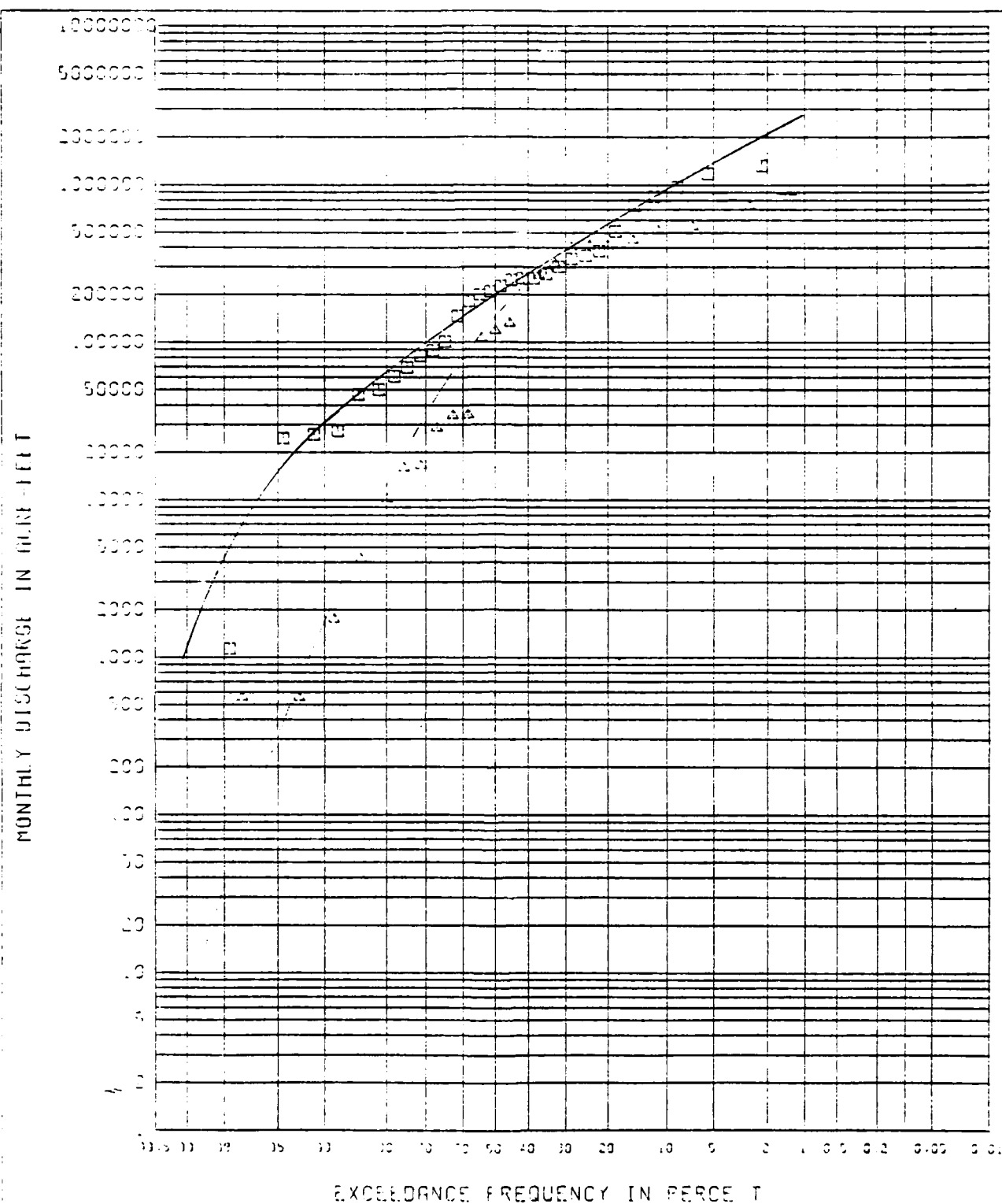
WRIGHT PATMAN LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

MARCH FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1970

PLATE 3



EXCEEDANCE FREQUENCY IN PERCENT

LEGEND

—■— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1923-1957)

- - -▲- - - POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1957-1973)

SULPHUR RIVER BASIN, TEXAS

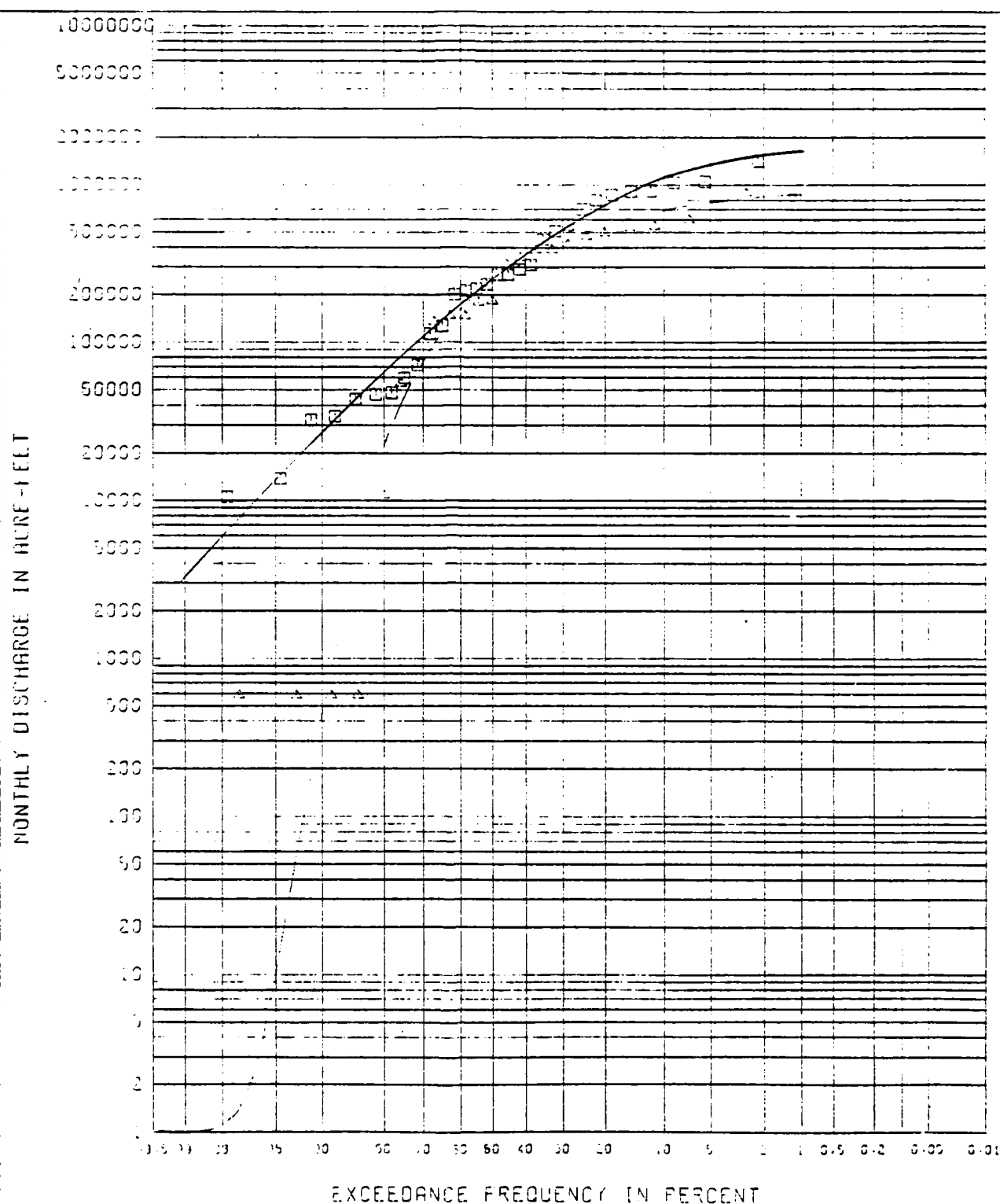
WRIGHT PATMAN LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

APRIL FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 4



LEGEND

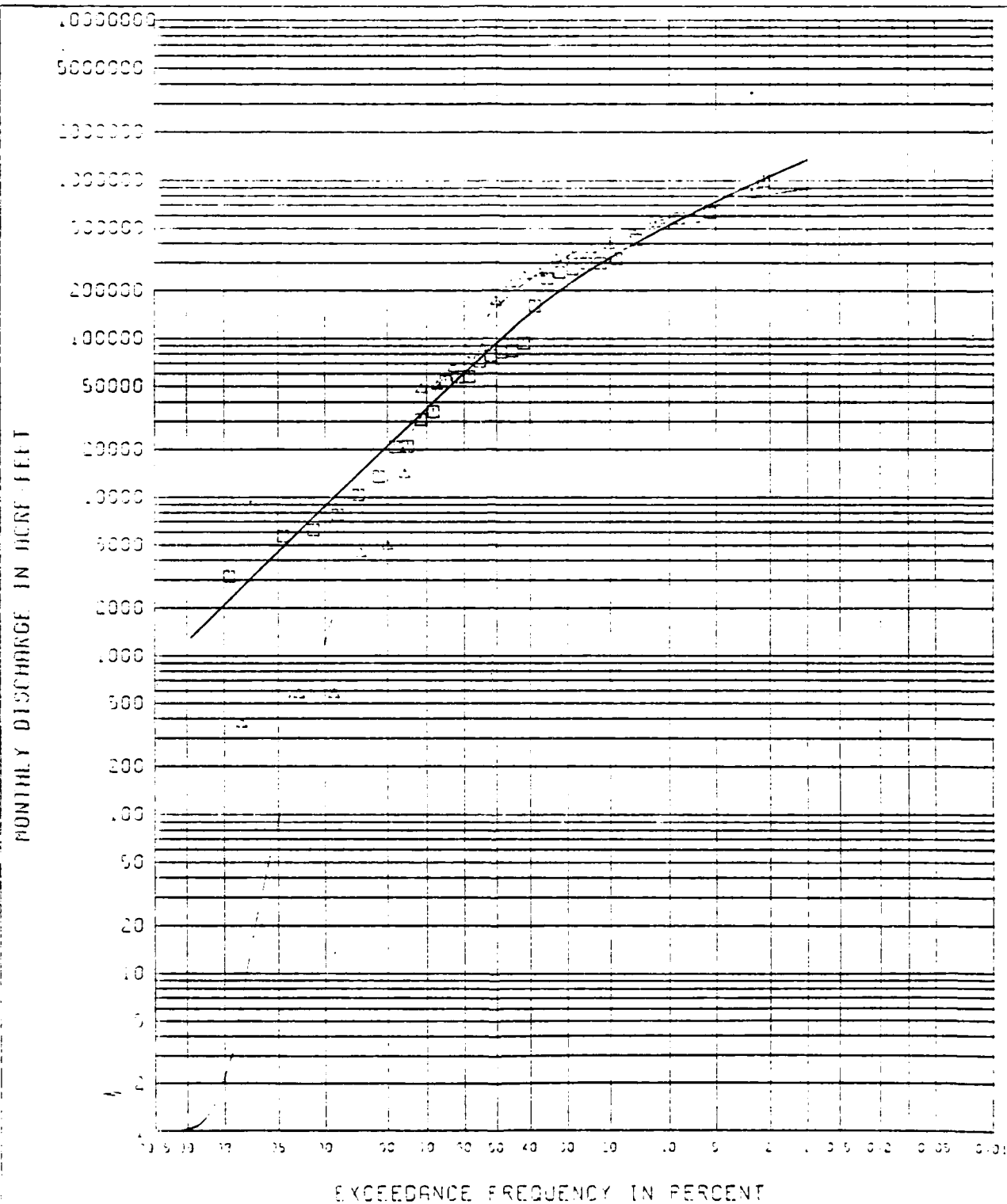
—■— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1923-1957)

-△- POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1957-1973)

SULPHUR RIVER BASIN, TEXAS
WRIGHT PATMAN LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
MAY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM CH PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 5



LEGEND

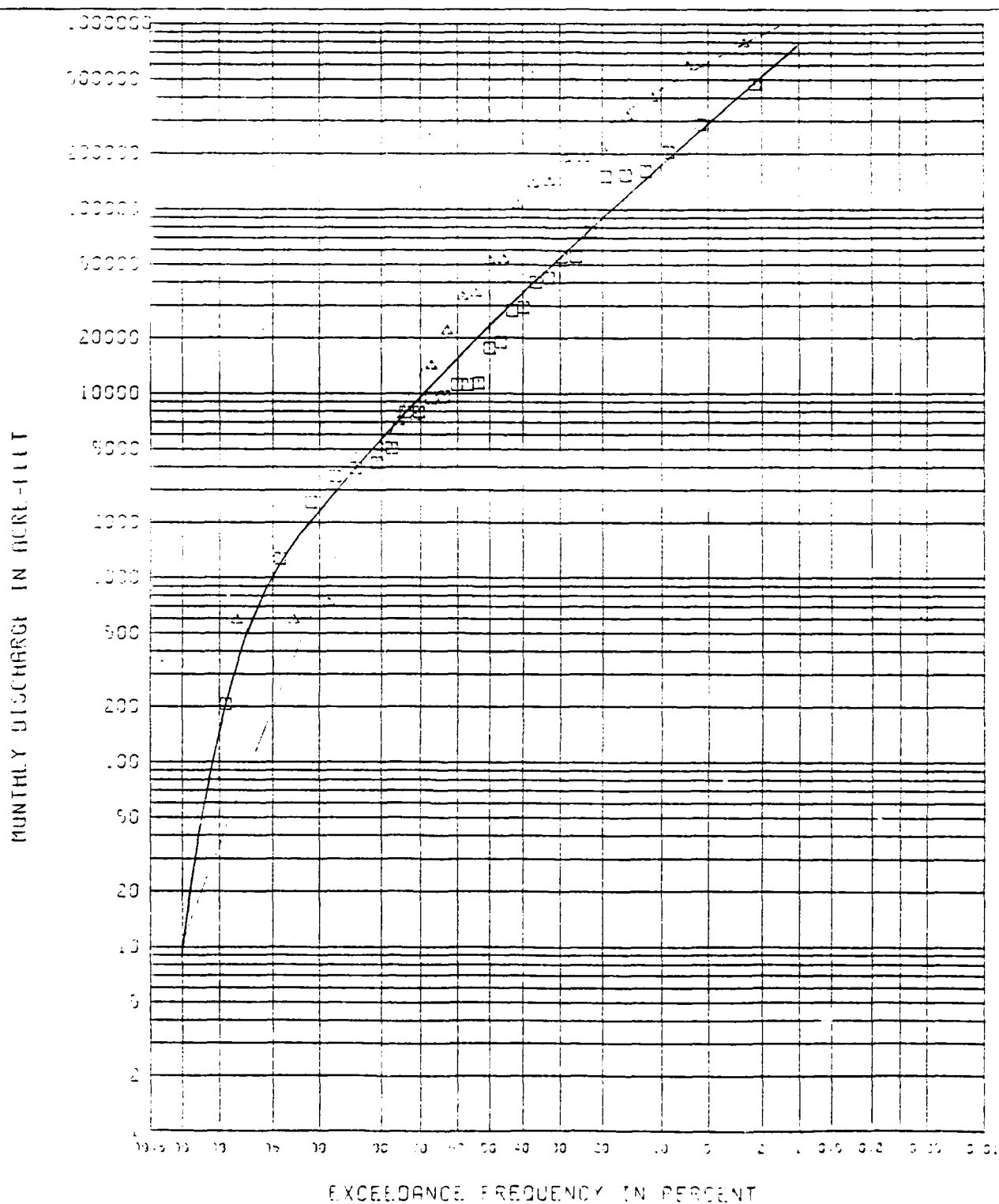
□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1923-1953)

△ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1957-1973)

SULPHUR RIVER BASIN, TEXAS
WRIGHT PATMAN LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
JUNE FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREEM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 6



LEGEND

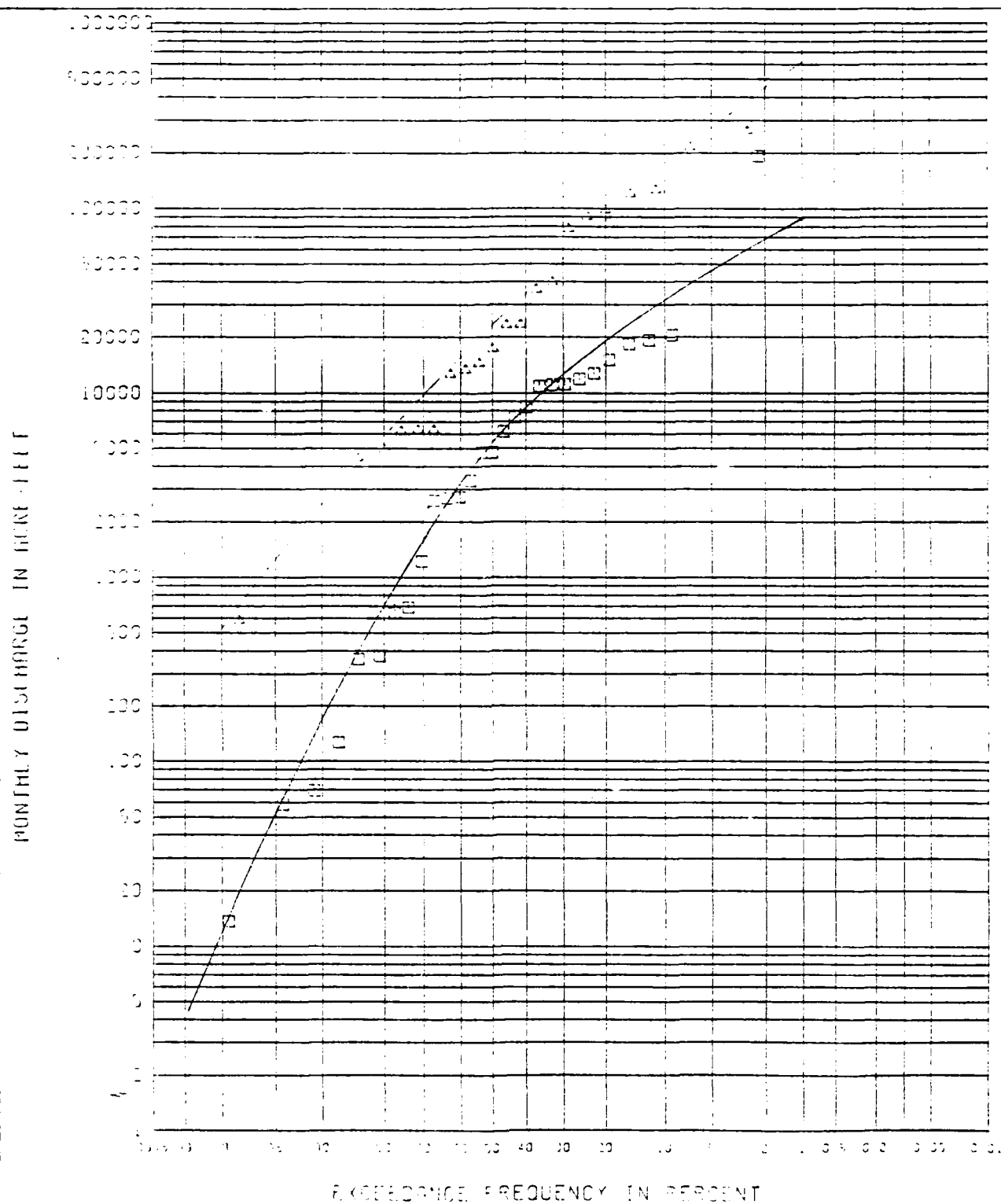
—□— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1923-1953)

-△- POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1957-1973)

TULSAH RIVER BASIN, TEXAS
WRIGHT PATMAN LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
JULY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 7



LEGEND

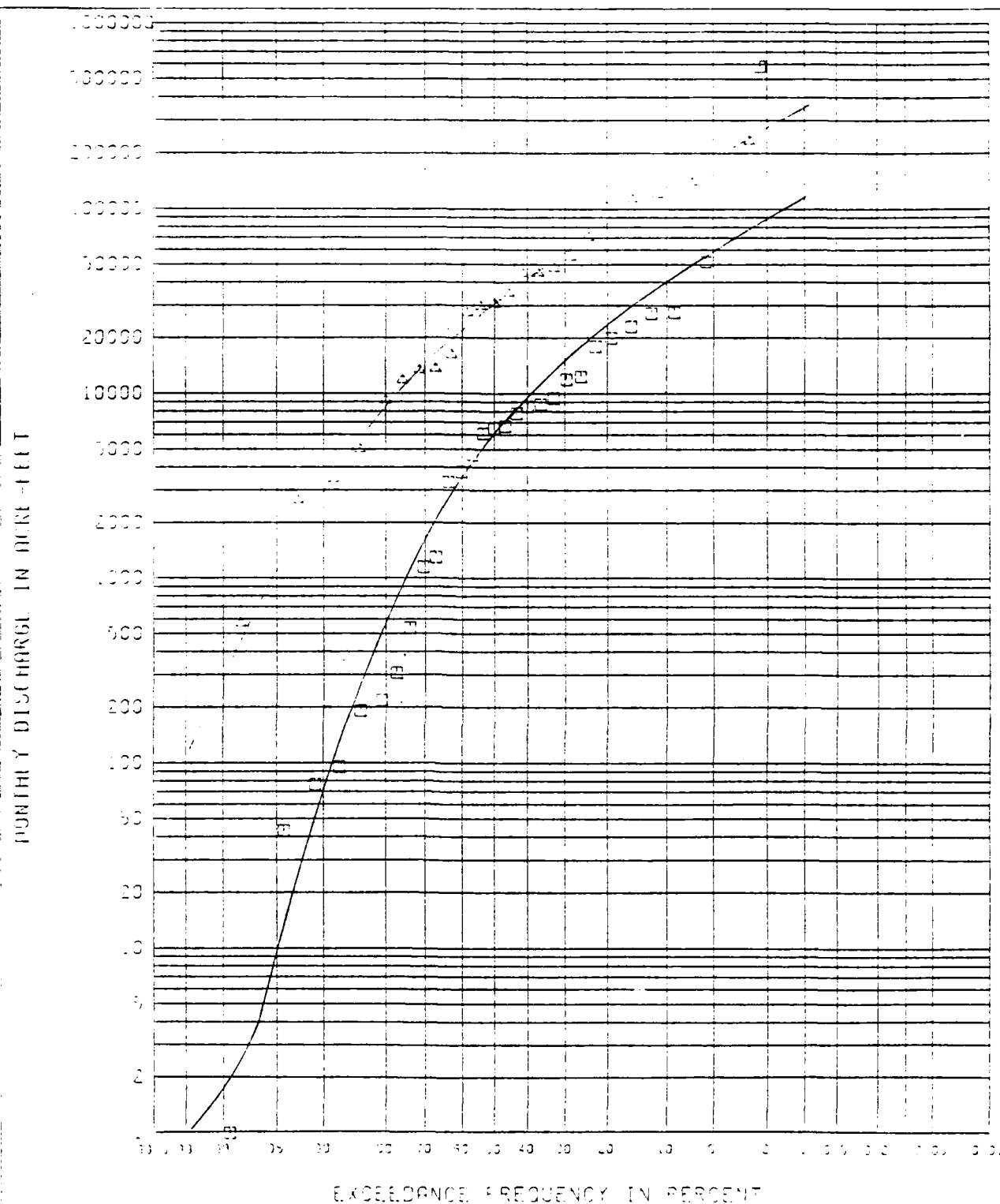
—□— PRE-IMPOUNDMENT CONDITIONS
PERIOD OF RECORD 1922-1957

—△— POST-IMPOUNDMENT CONDITIONS
PERIOD OF RECORD 1957-1970

WAPOR RIVER BASIN, TEXAS
WRIGHT PATMAN LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
AUGUST FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 8



LEGEND

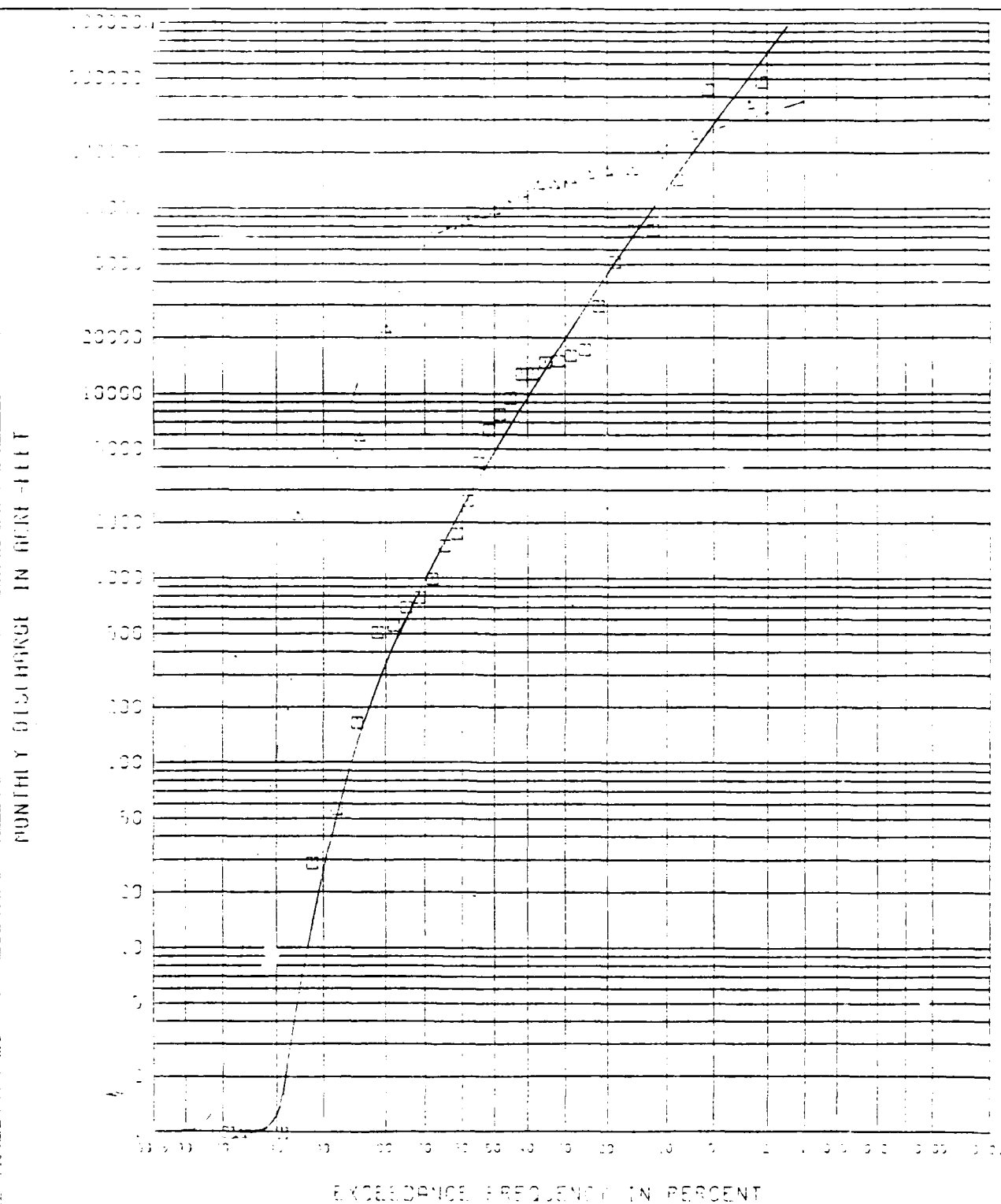
— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1922-1953)

- - - POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1954-1973)

CULHAM RIVER BASIN, TEXAS
WRIGHT PATMAN LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
SEPTEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 9



LEGEND

—■— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1923-1927)

- - -X- POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1957-1973)

COLEMAN RIVER BASIN, TEXAS
WRIGHT PATMAN LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
OCTOBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 10

UNCLASSIFIED

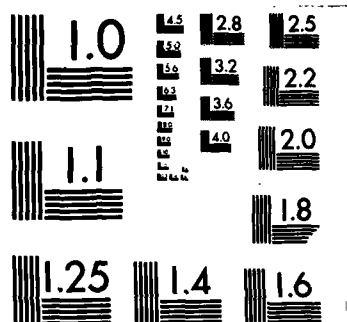
ACCOMPLISHMENTS OF THE SOUTHWEST. (U) CORPS OF
ENGINEERS DALLAS TX SOUTHWESTERN DIV JAN 81

217

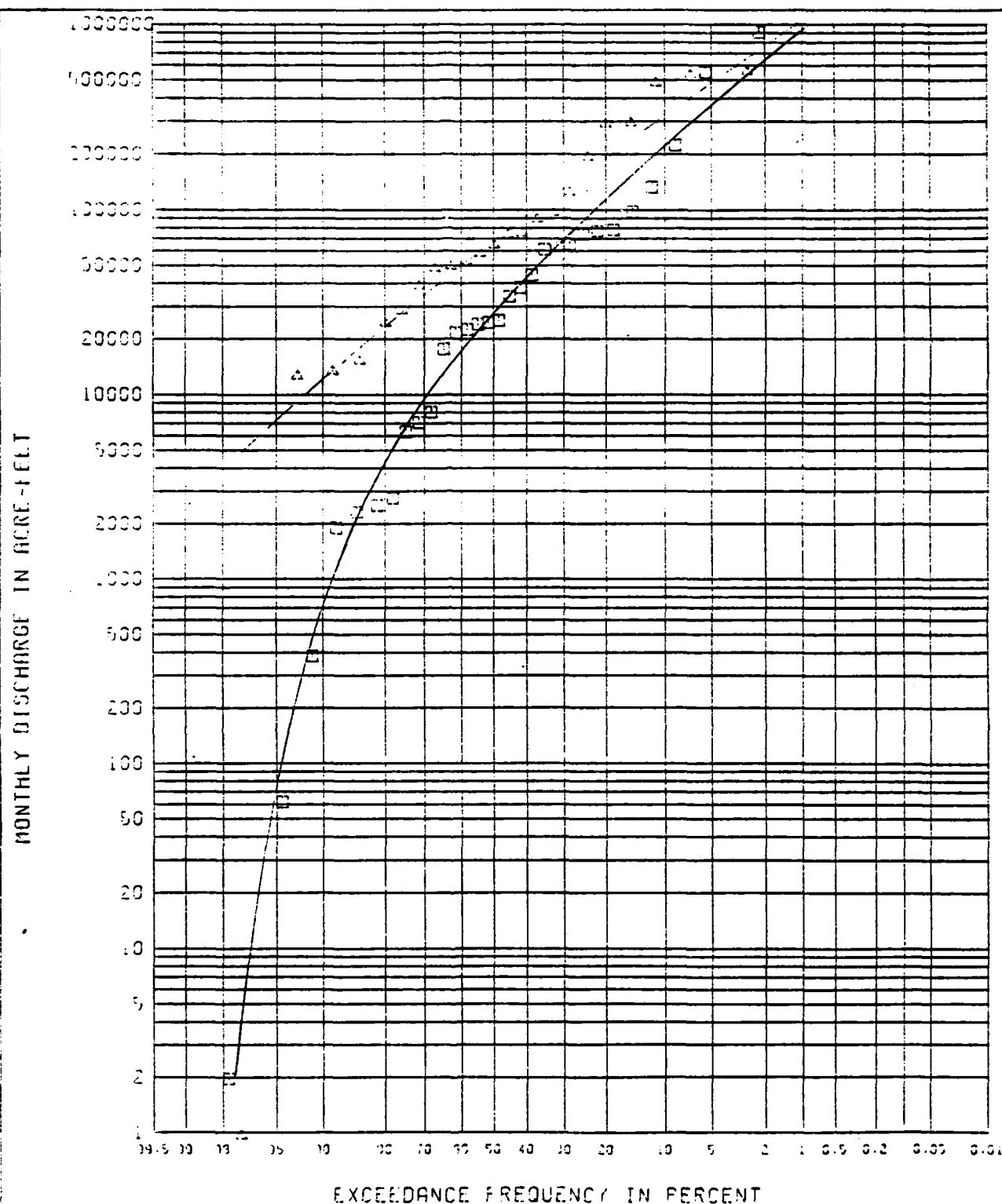
F/G 13/2

NL

A 10x10 grid of squares, with the top-left square missing.



MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A



LEGEND

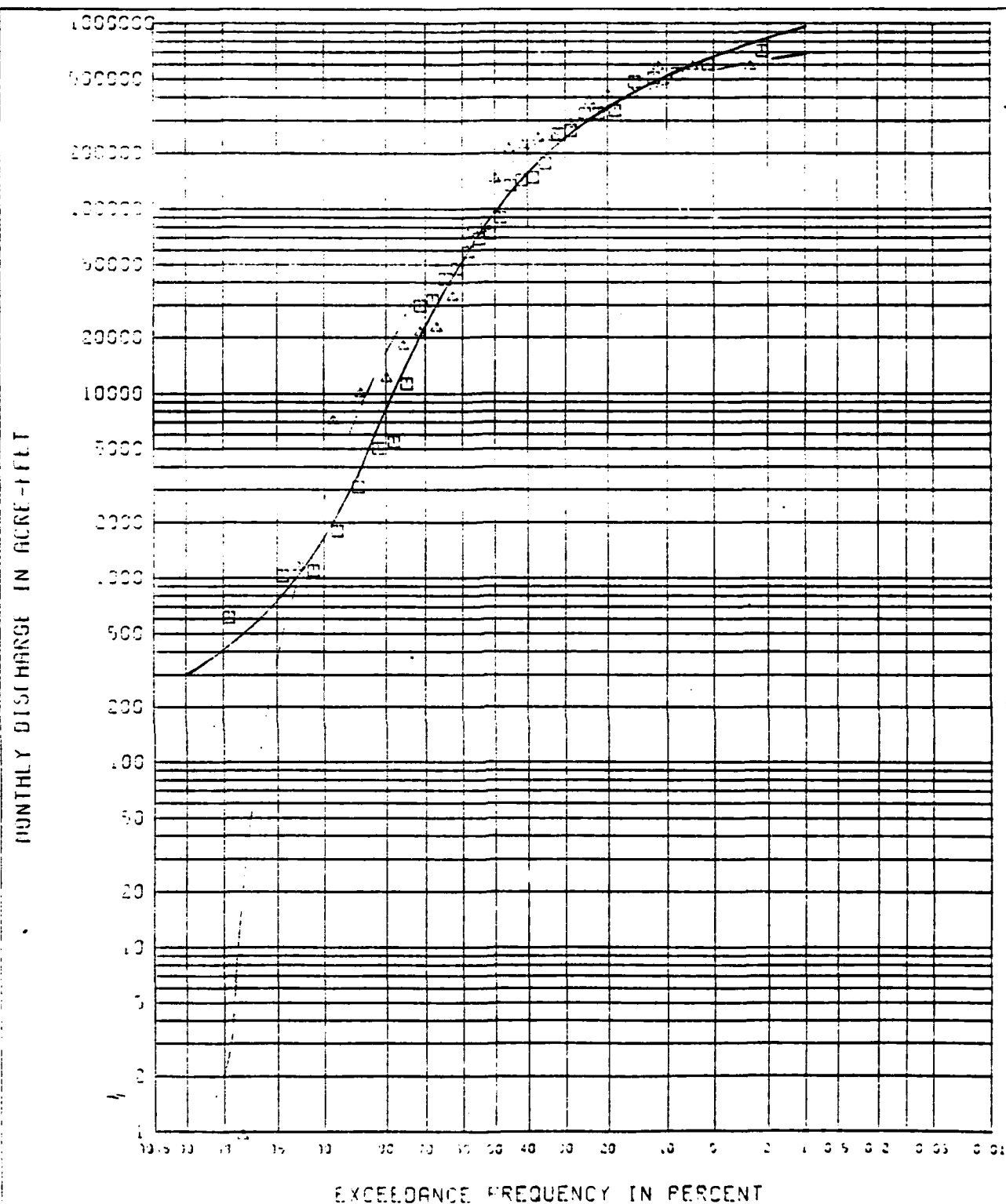
—■— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1923-1957)

-▲- POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1957-1973)

TULSAH RIVER BASIN, TEXAS
WRIGHT PATMAN LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
NOVEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE II



LEGEND

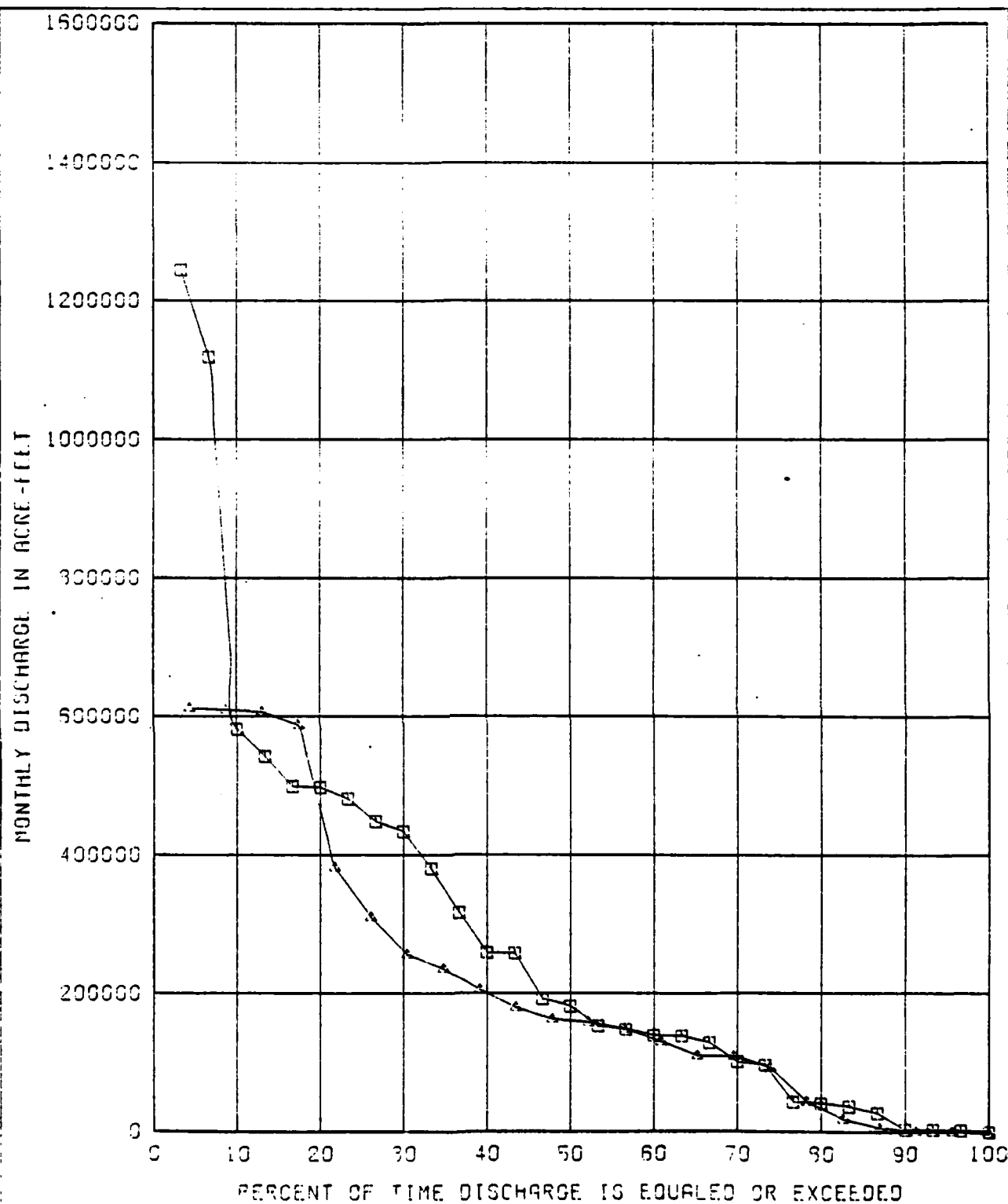
— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1923-1953)

— POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1957-1973)

SULPHUR RIVER BASIN, TEXAS
WRIGHT PATMAN LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
DECEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1950

PLATE 12



LEGEND

□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1923-1953)

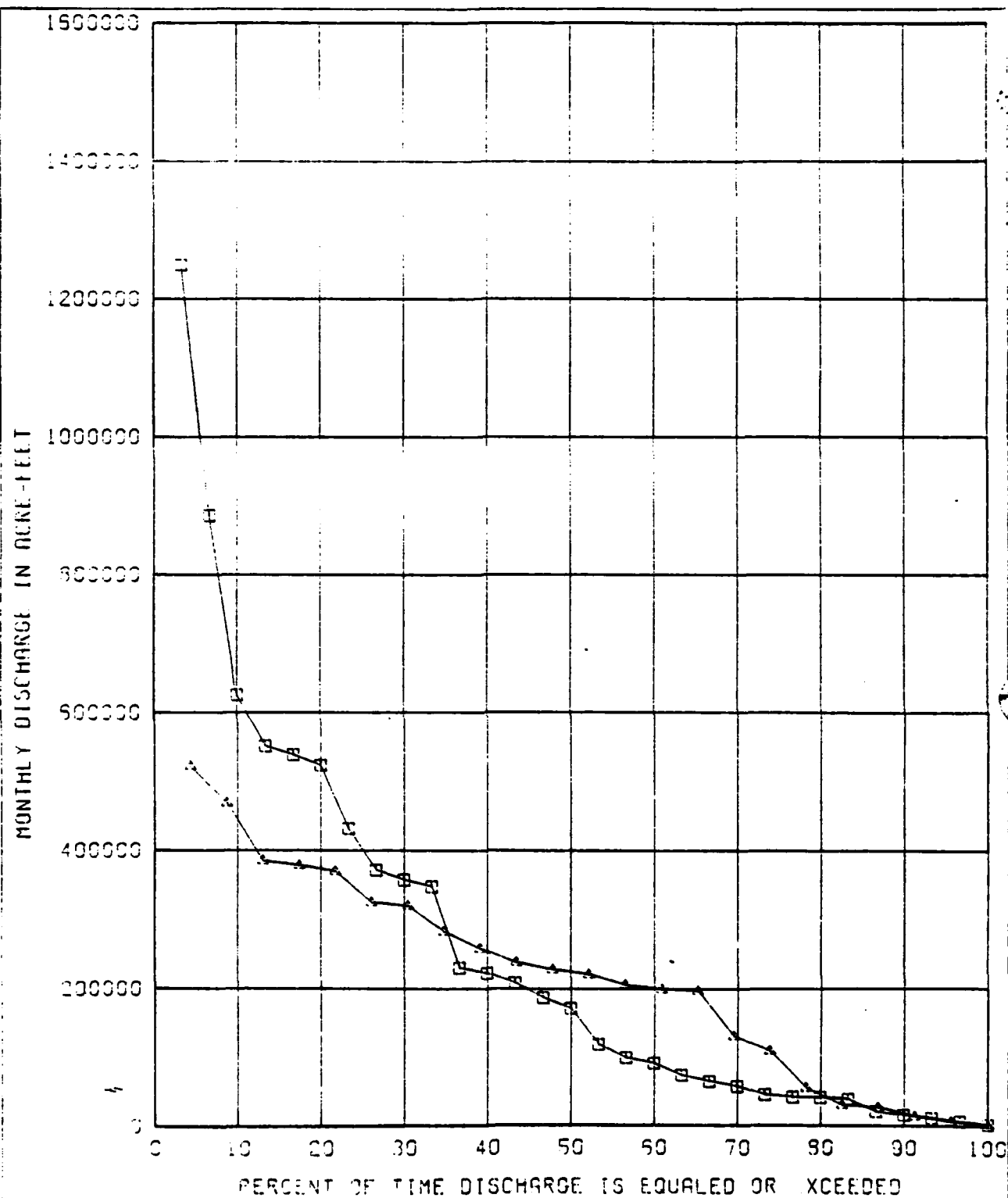
△ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1957-1973)

CULPHUR RIVER BASIN, TEXAS
WRIGHT PATMAN LAKE

FLOW DURATION CURVES AT DAM SITE
JANUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 13



LEGEND

□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1923-1955)

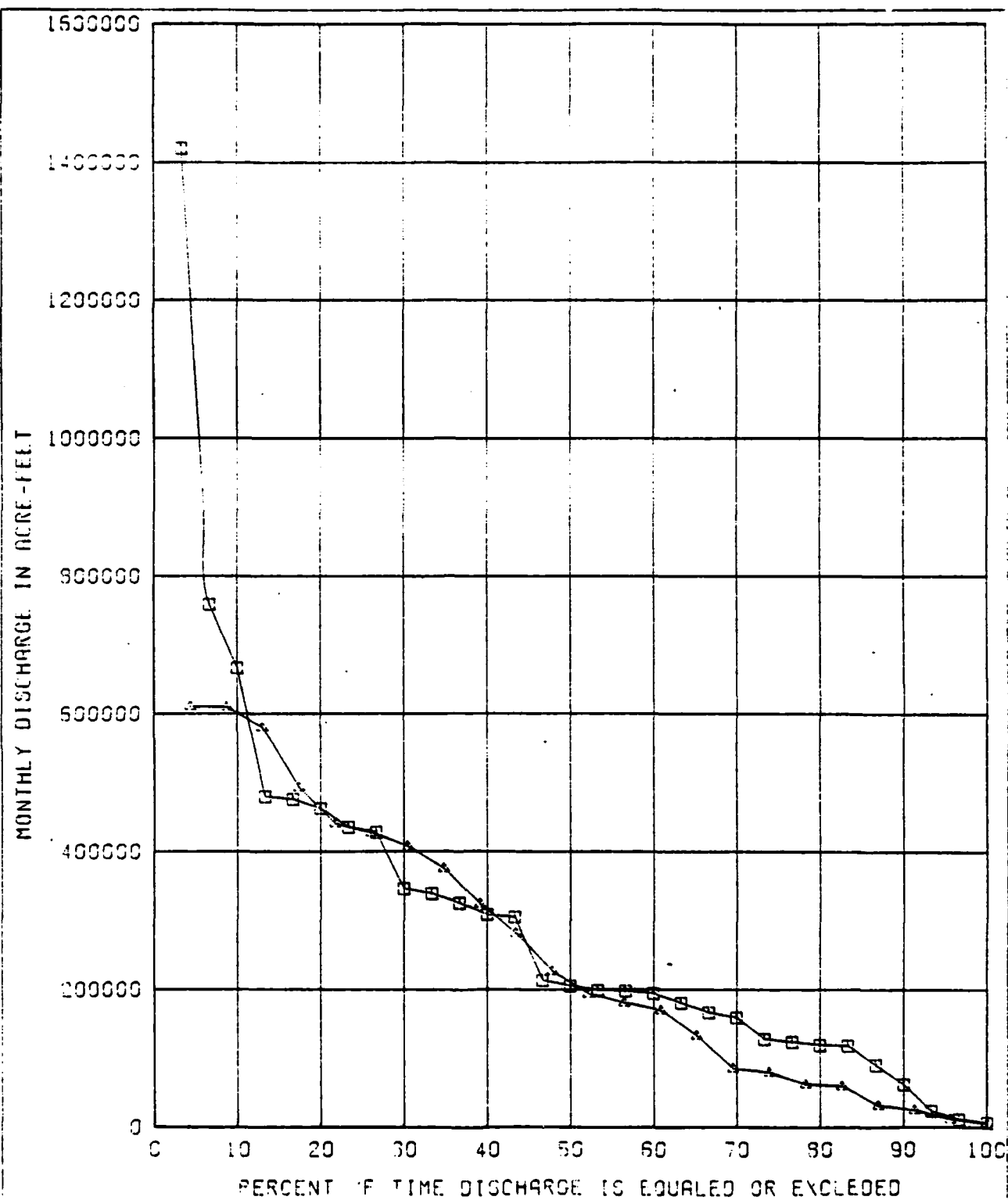
▲ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1957-1971)

CULPHUR RIVER BASIN, TEXAS
WRIGHT PATMAN LAKE

FLOW DURATION CURVES AT DAM SITE
FEBRUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT NORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 14



LEGEND

□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1923-1957)

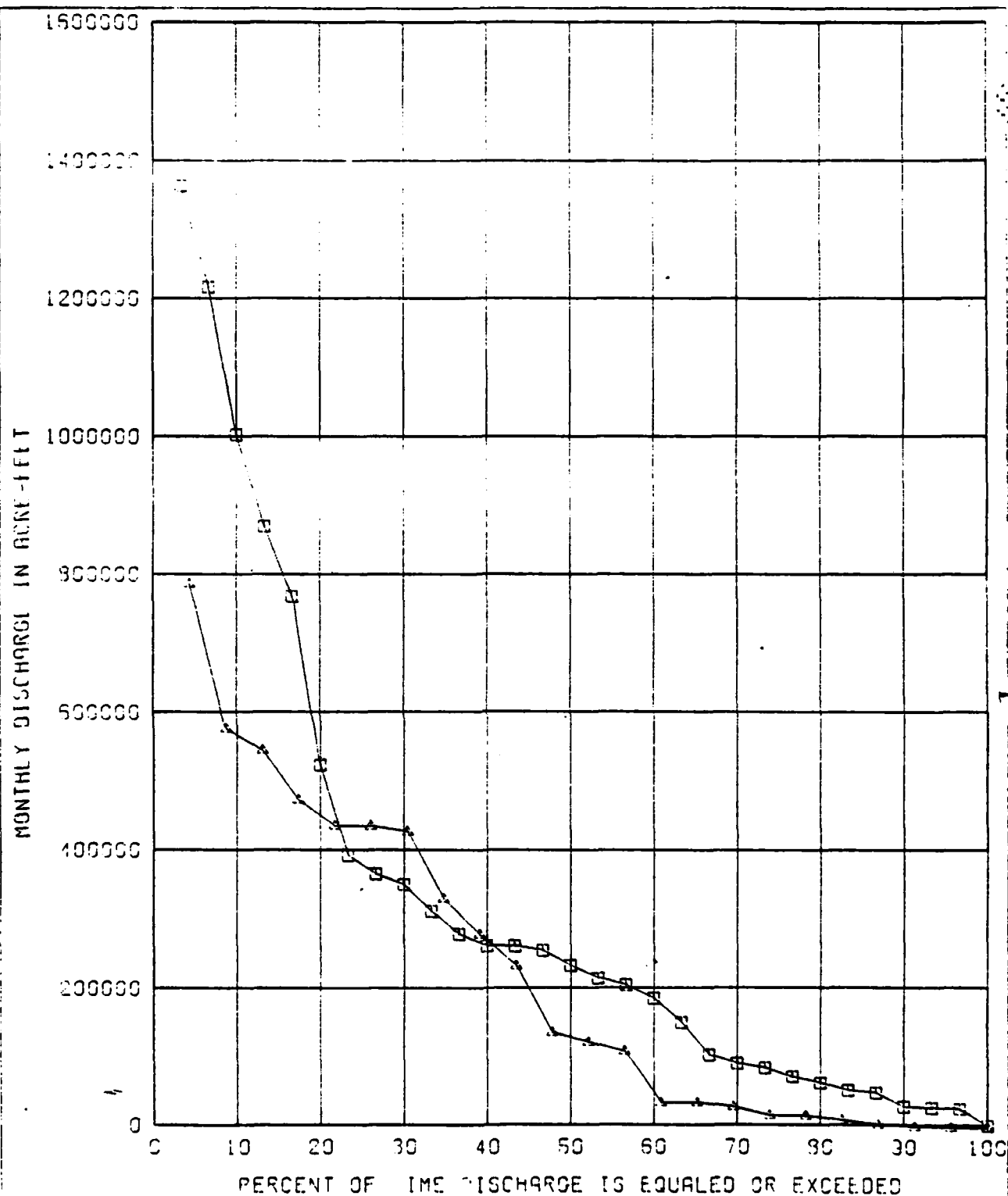
▲ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1957-1973)

CULPHUR RIVER BASIN, TEXAS
WRIGHT PATMAN LAKE

FLOW DURATION CURVES AT DAM SITE
MARCH FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 15



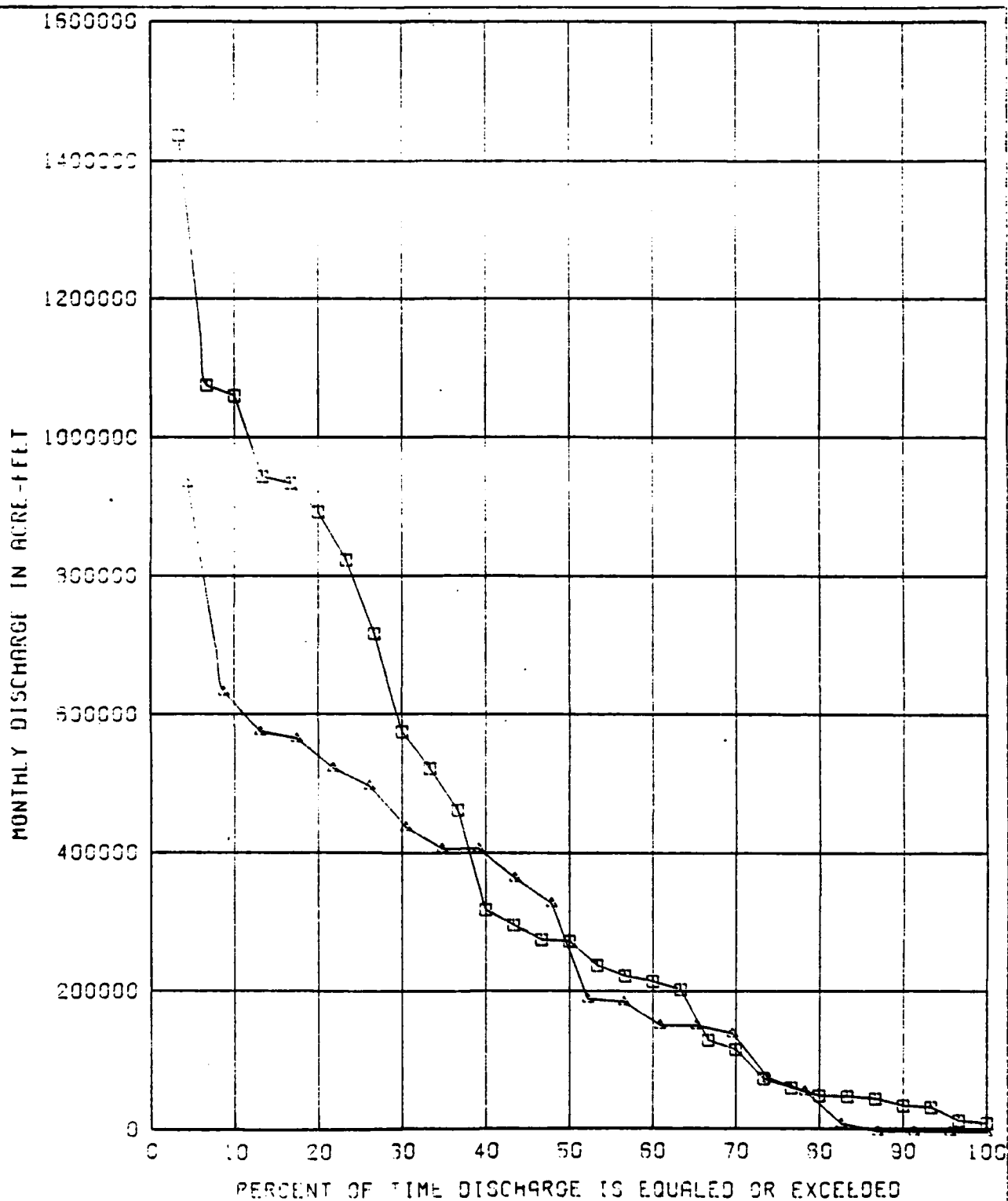
LEGEND

- — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1923-1952)
- △ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1972)

SULPHUR RIVER BASIN, TEXAS
 WRIGHT PATMAN LAKE
 FLOW DURATION CURVES AT DAM SITE
 APRIL FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
 TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
 EVALUATION REPORT OF DECEMBER 1990

PLATE 16



LEGEND

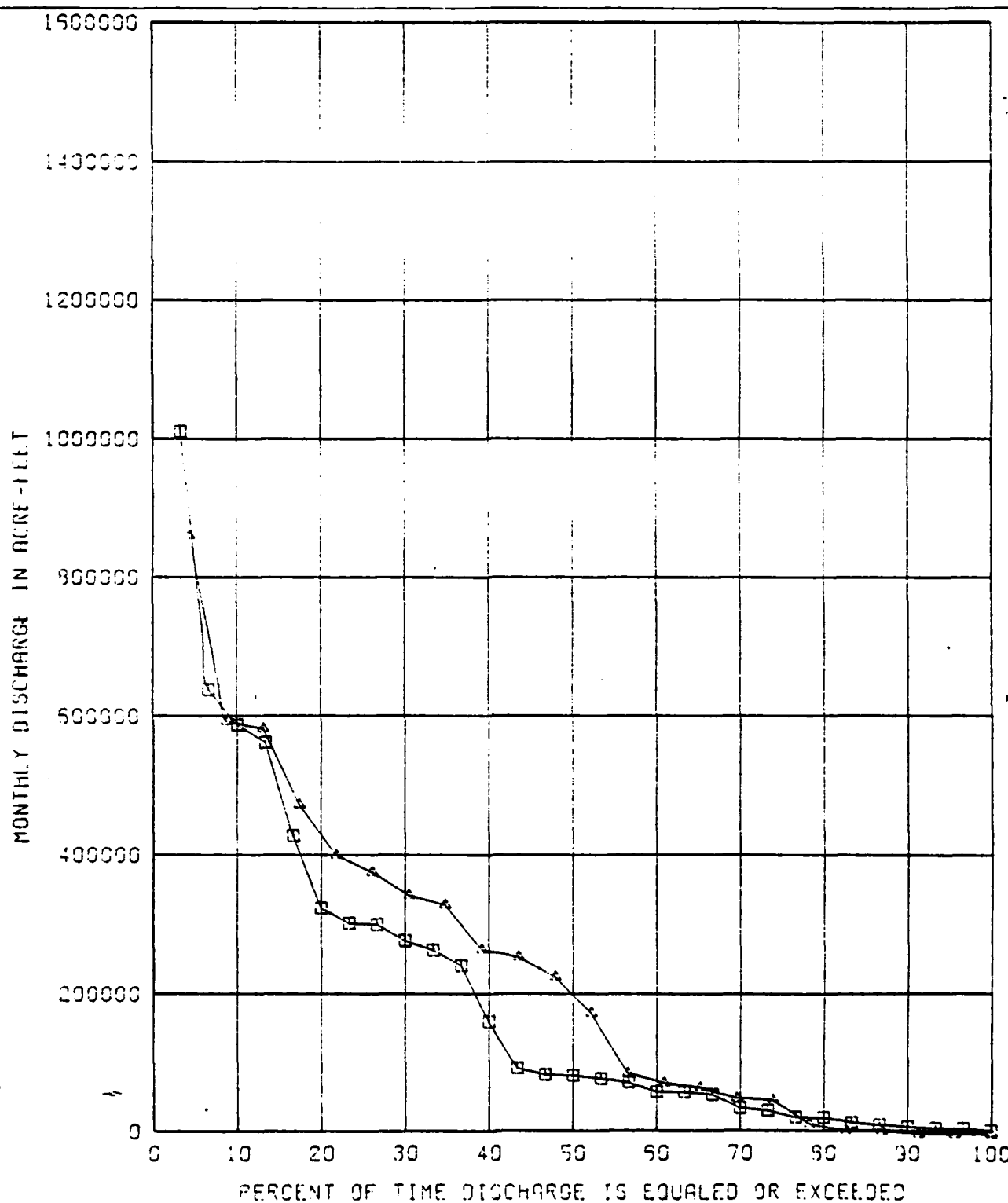
- — PRE-IMPOUNDMENT CONDITIONS
 (PERIOD OF RECORD 1923-1957)
- ▲ — POST-IMPOUNDMENT CONDITIONS
 (PERIOD OF RECORD 1957-1973)

GULF RIVER BASIN, TEXAS
 WRIGHT PATMAN LAKE

FLOW DURATION CURVES AT DAM SITE
 MAY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
 TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
 EVALUATION REPORT OF DECEMBER 1980

PLATE 17



LEGEND

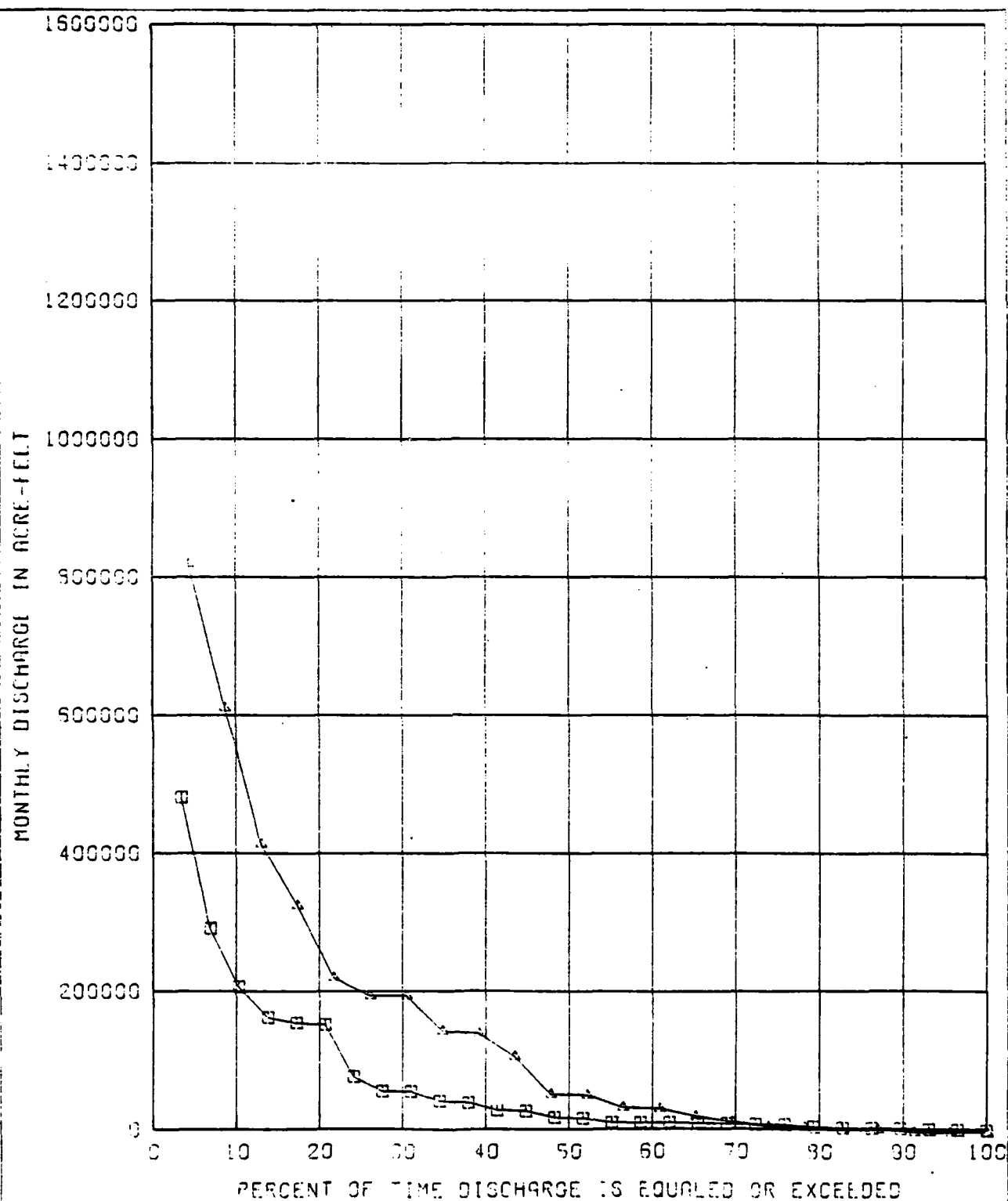
- — PRE-IMPOUNDMENT CONDITIONS
 (PERIOD OF RECORD 1923-1953)
- ▲ — POST-IMPOUNDMENT CONDITIONS
 (PERIOD OF RECORD 1957-1973)

SULPHUR RIVER BASIN, TEXAS
 WRIGHT PATMAN LAKE

FLOW DURATION CURVES AT DAM SITE
 JUNE FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
 TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
 EVALUATION REPORT OF DECEMBER 1990

PLATE 18



LEGEND

□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1923-1953)

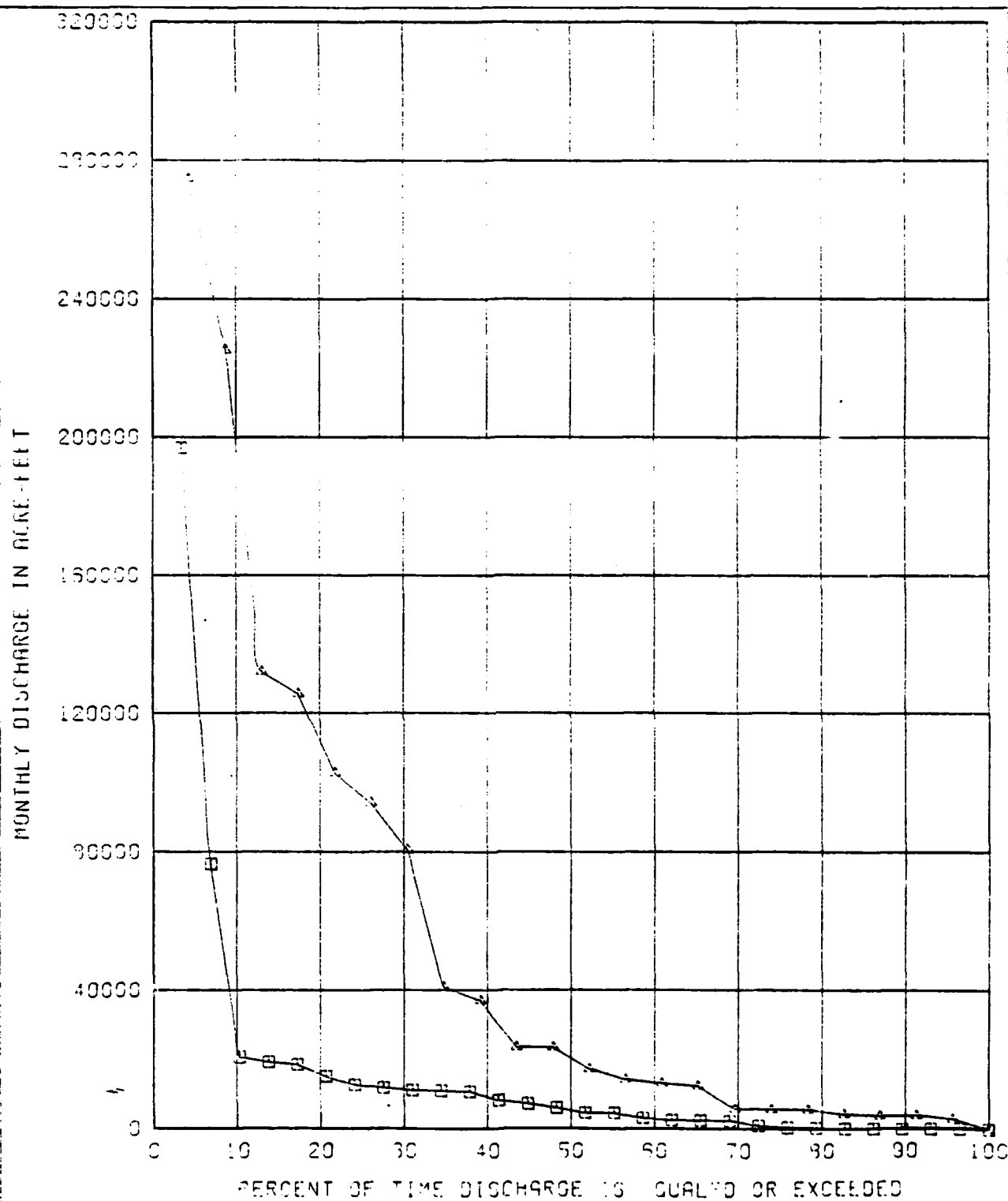
▲ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1957-1973)

SULPHUR RIVER BASIN, TEXAS
WRIGHT PATMAN LAKE

FLOW DURATION CURVES AT DAM SITE
JULY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 19



LEGEND

□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1923-1957)

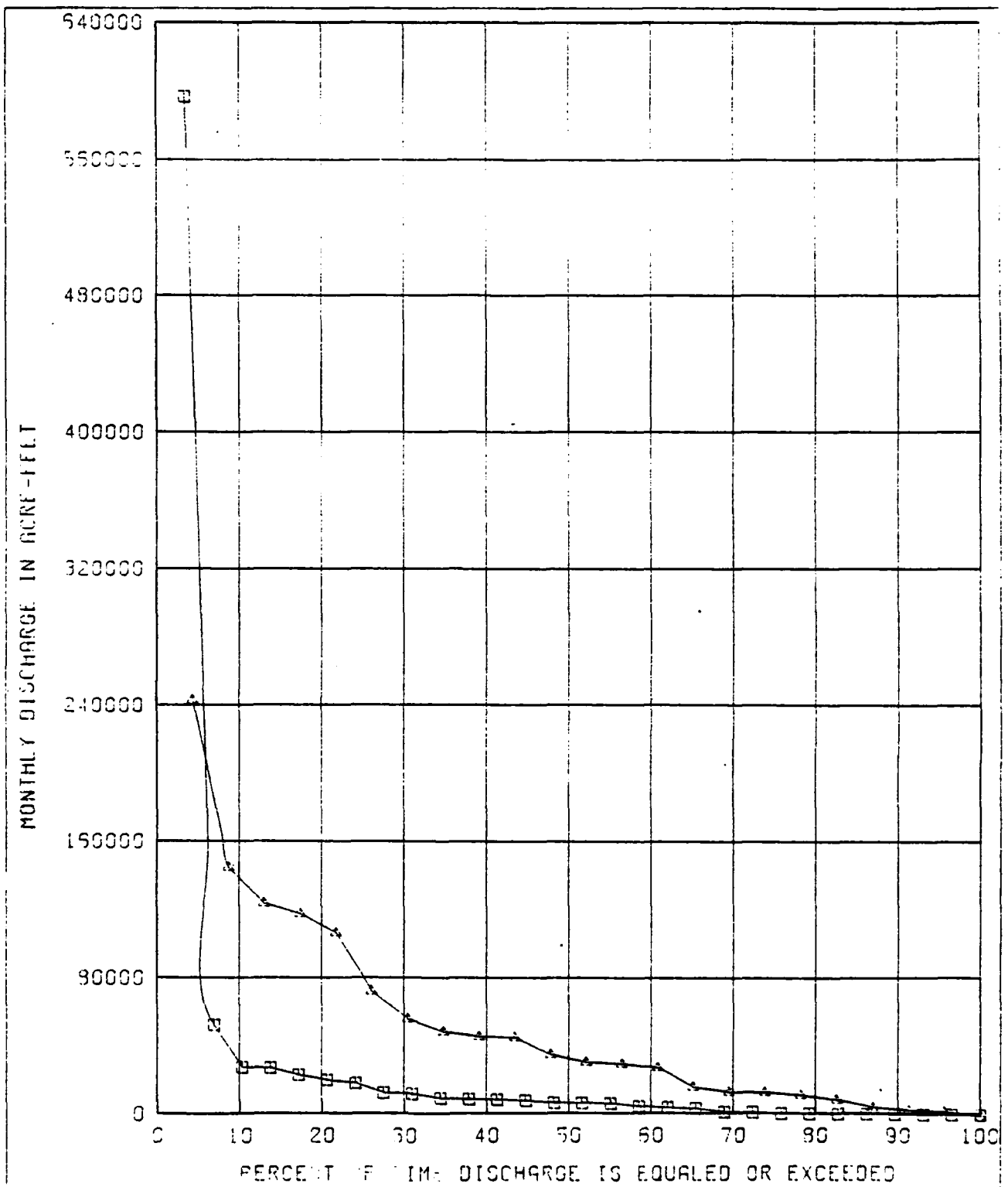
▲ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1957-1973)

SULPHUR RIVER BASIN, TEXAS
WRIGHT PATMAN LAKE

FLOW DURATION CURVES AT DAM SITE
AUGUST FLOWS

U.S. ARMY ENGINEERS DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 20



LEGEND

□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1923-1953)

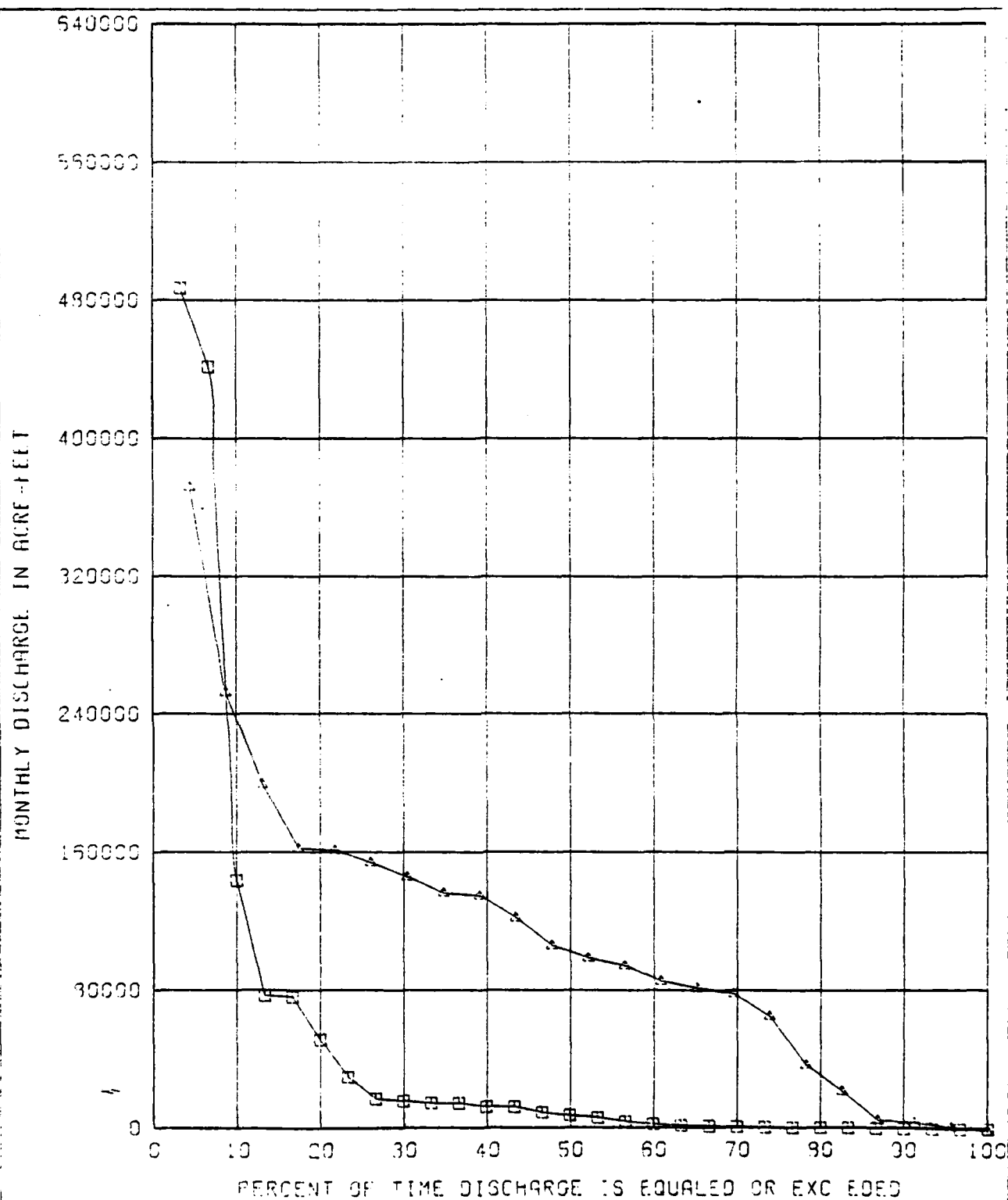
▲ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1957-1973)

SULPHUR RIVER BASIN, TEXAS
WRIGHT PATMAN LAKE

FLOW DURATION CURVES AT DAM SITE
SEPTEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 21



LEGEND

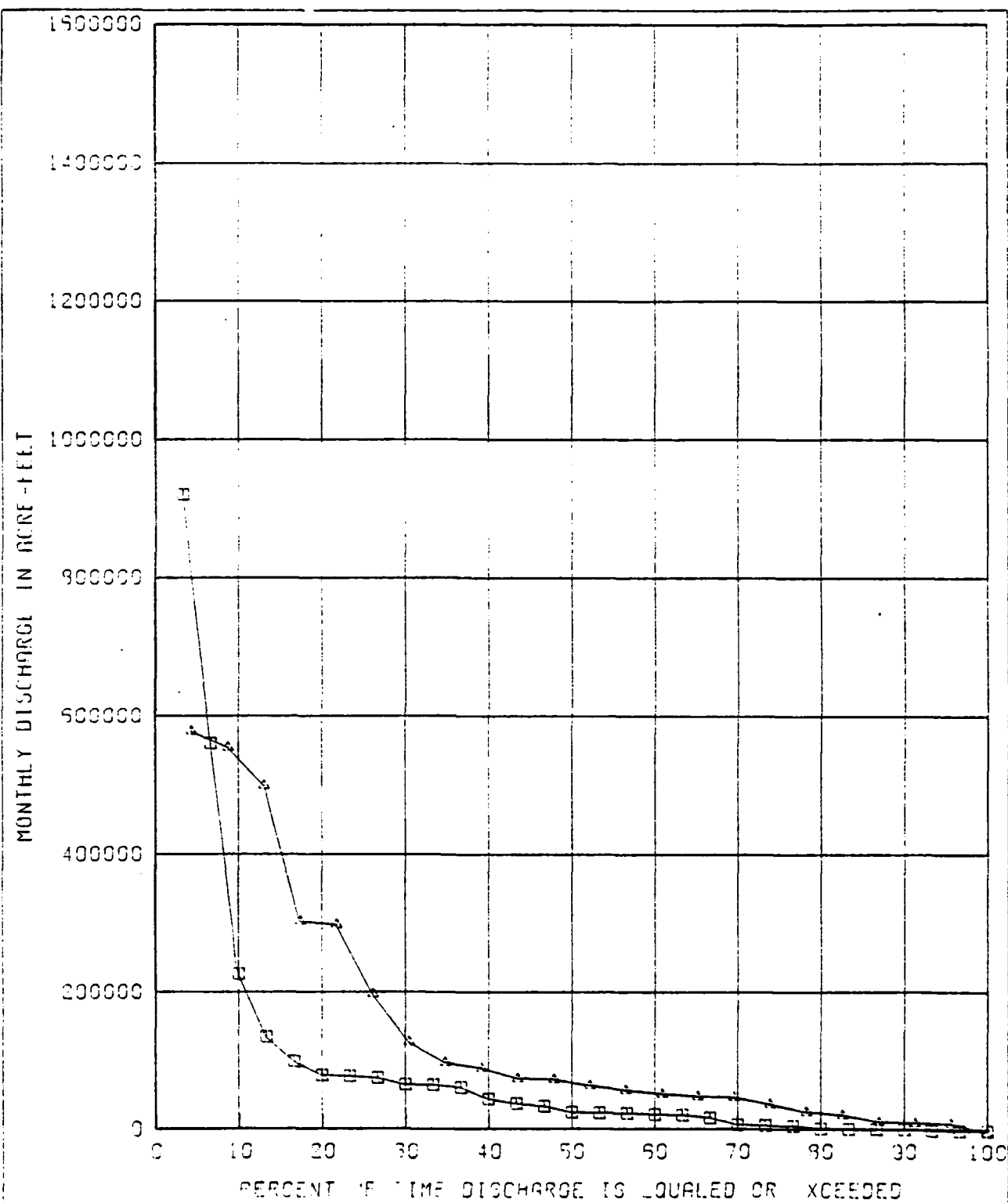
- — PRE-IMPOUNDMENT CONDITIONS
 (PERIOD OF RECORD 1923-1951)
- ▲ — POST-IMPOUNDMENT CONDITIONS
 (PERIOD OF RECORD 1957-1973)

SULPHUR RIVER BASIN, TEXAS
 WRIGHT PATMAN LAKE

FLOW DURATION CURVES AT DAM SITE
 OCTOBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
 TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
 EVALUATION REPORT OF DECEMBER 1990

PLATE 22



LEGEND

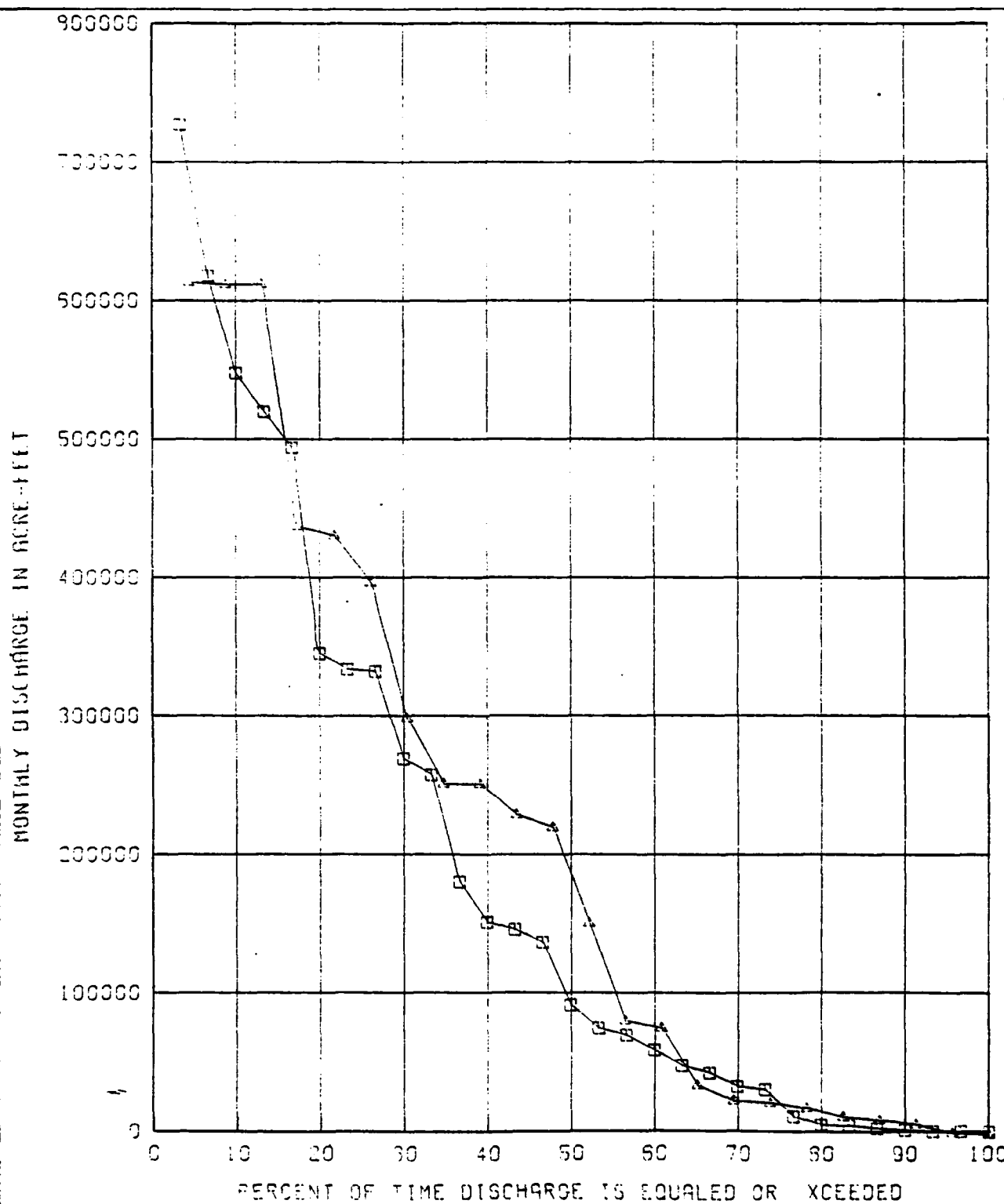
- — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1923-1950)
- ▲ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1957-1973)

SULPHUR RIVER BASIN, TEXAS
WRIGHT PATMAN LAKE

FLOW DURATION CURVES AT DAM SITE
NOVEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 23



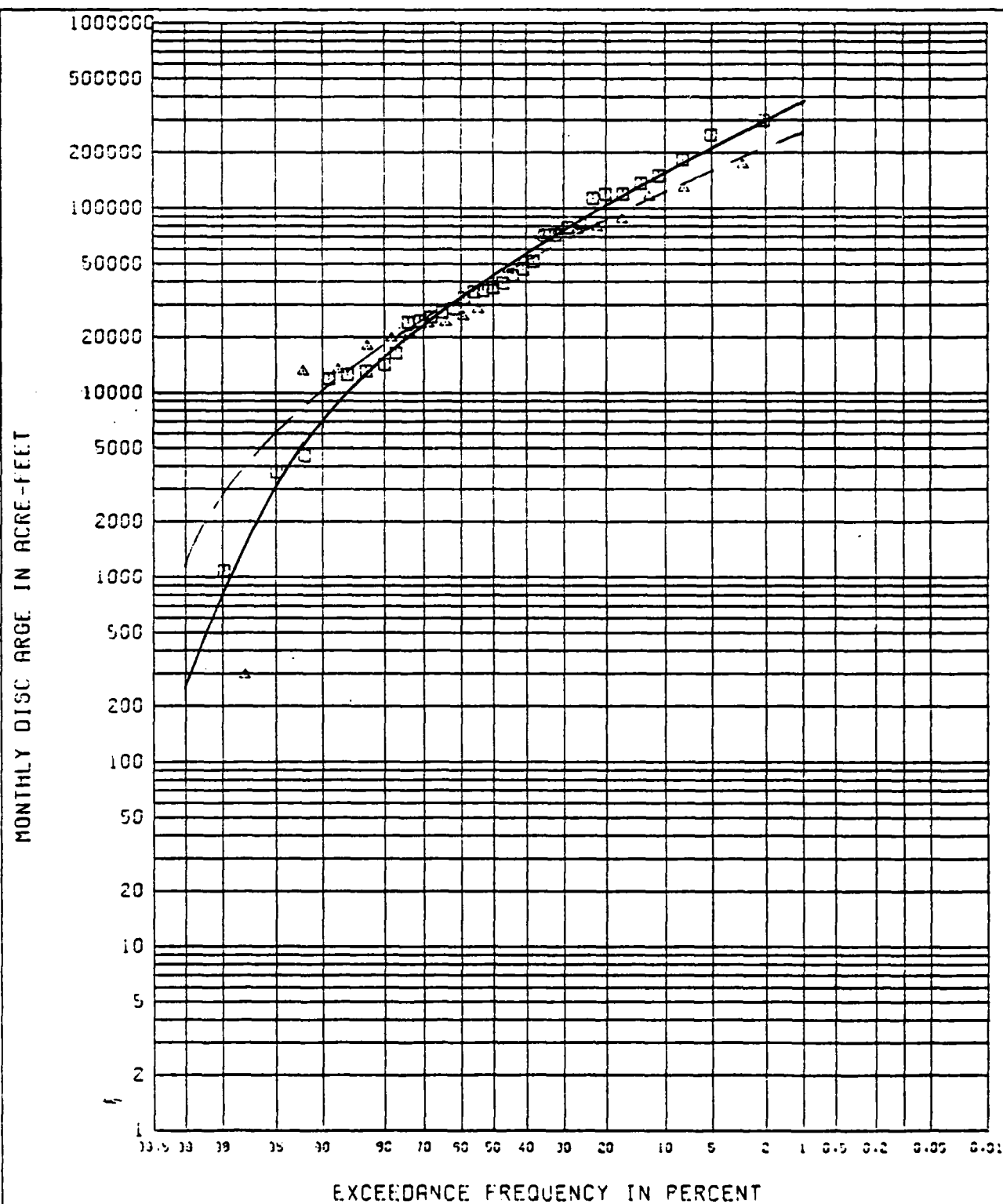
LEGEND

- — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1923-1953)
- ▲ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1957-1973)

SULPHUR RIVER BASIN, TEXAS
WRIGHT PATMAN LAKE

FLOW DURATION CURVES AT DAM ITE
DECEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990



LEGEND

— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1957)

- - - POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1959-1973)

CYPRESS CREEK BASIN, TEXAS

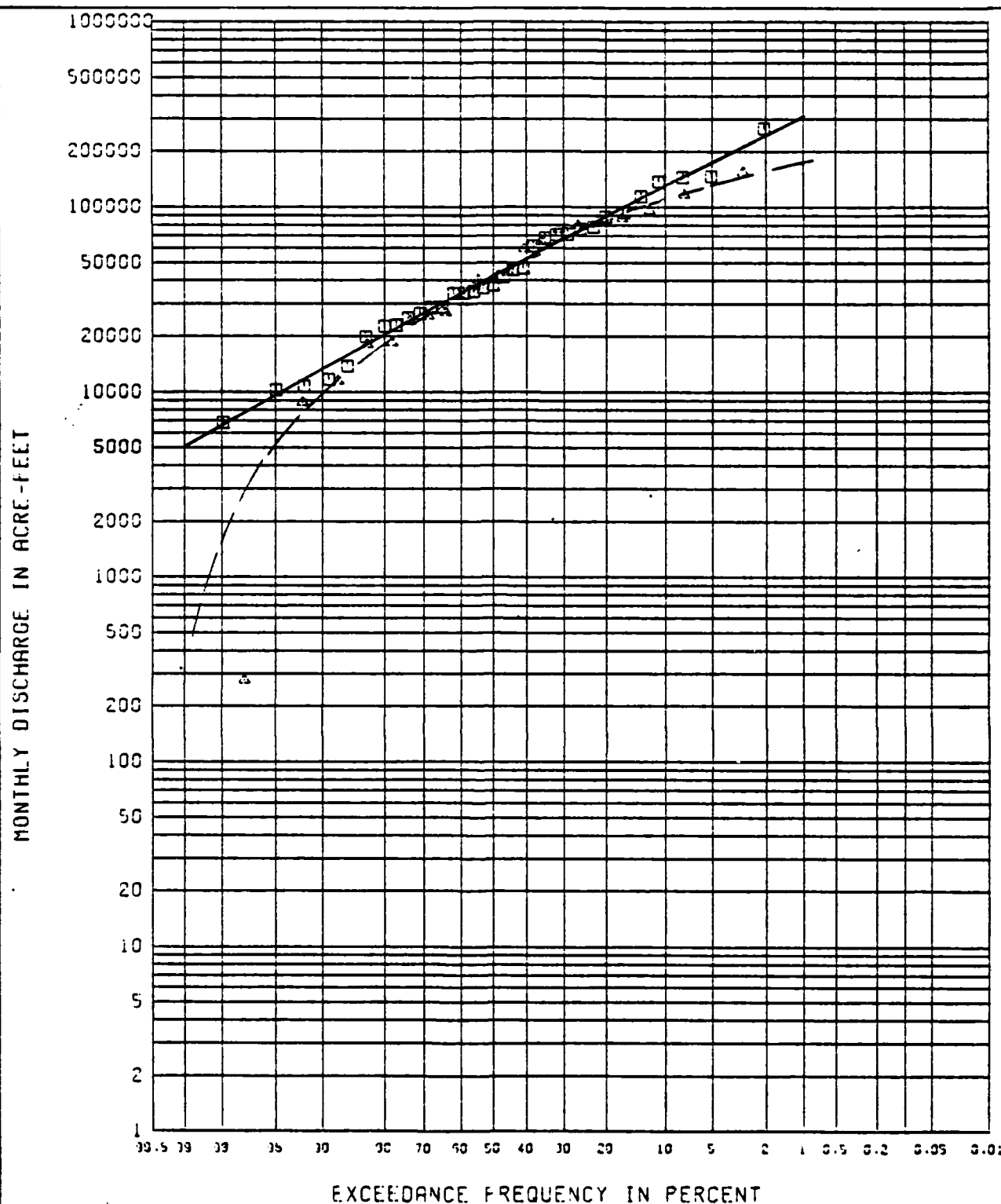
LAKE OF THE PINES

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

JANUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE I



LEGEND

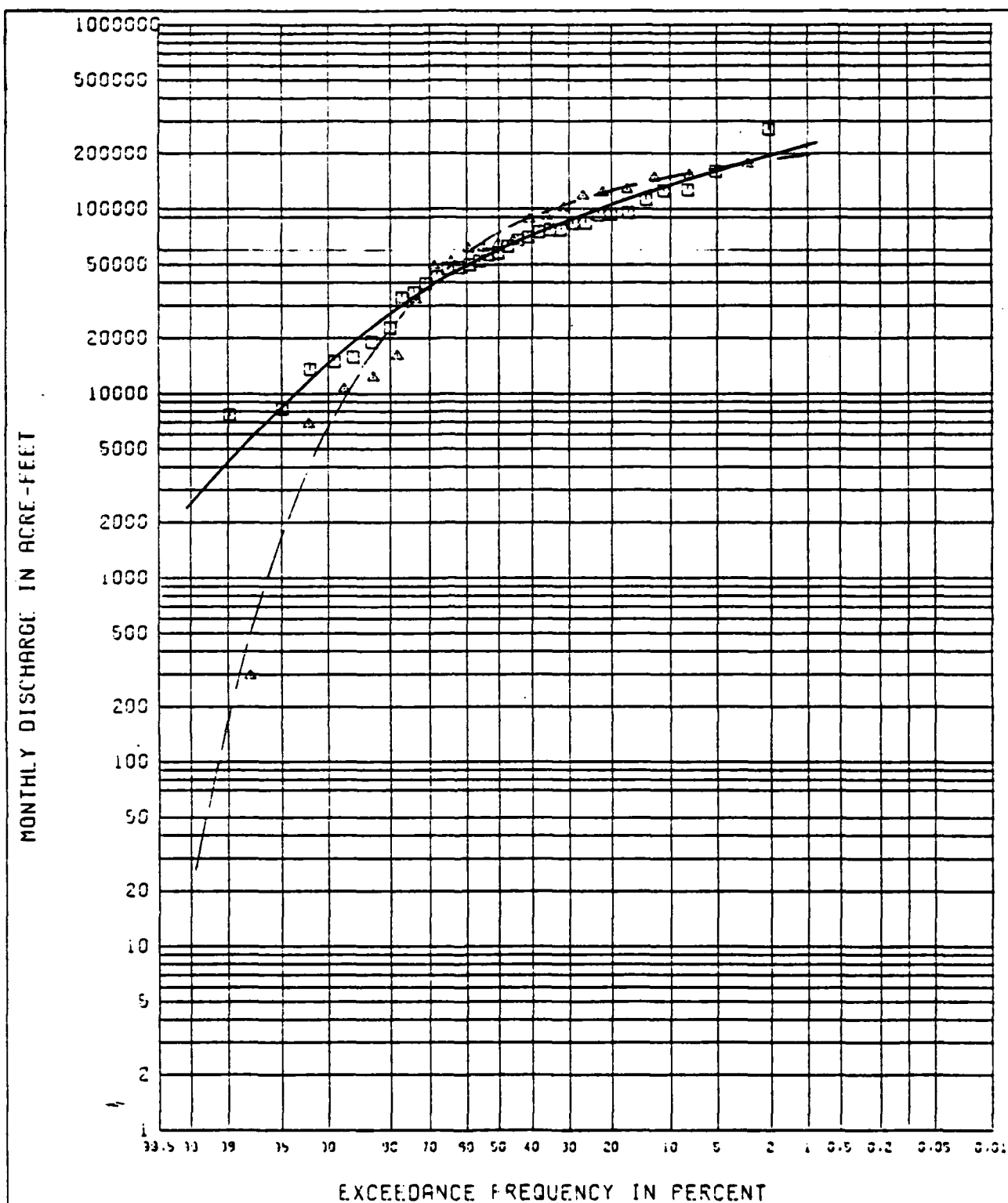
—●— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1957)

—▲— POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1959-1973)

CYPRESS CREEK BASIN, TEXAS
LAKE OF THE PINES
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
FEBRUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 2



LEGEND

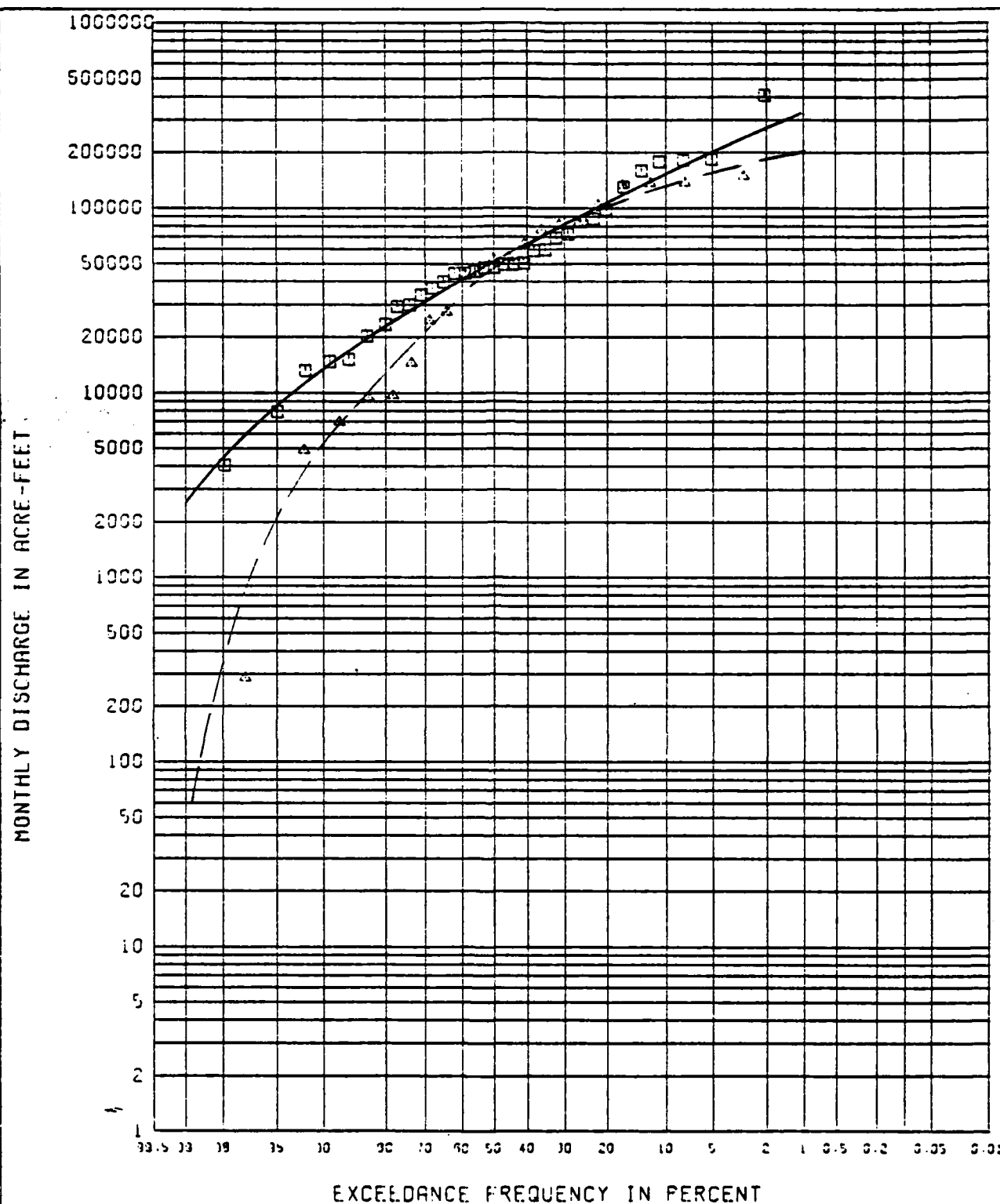
— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1957)

- - - POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1959-1979)

CYPRESS CREEK BASIN, TEXAS
LAKE OF THE PINES
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
MARCH FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 3



LEGEND

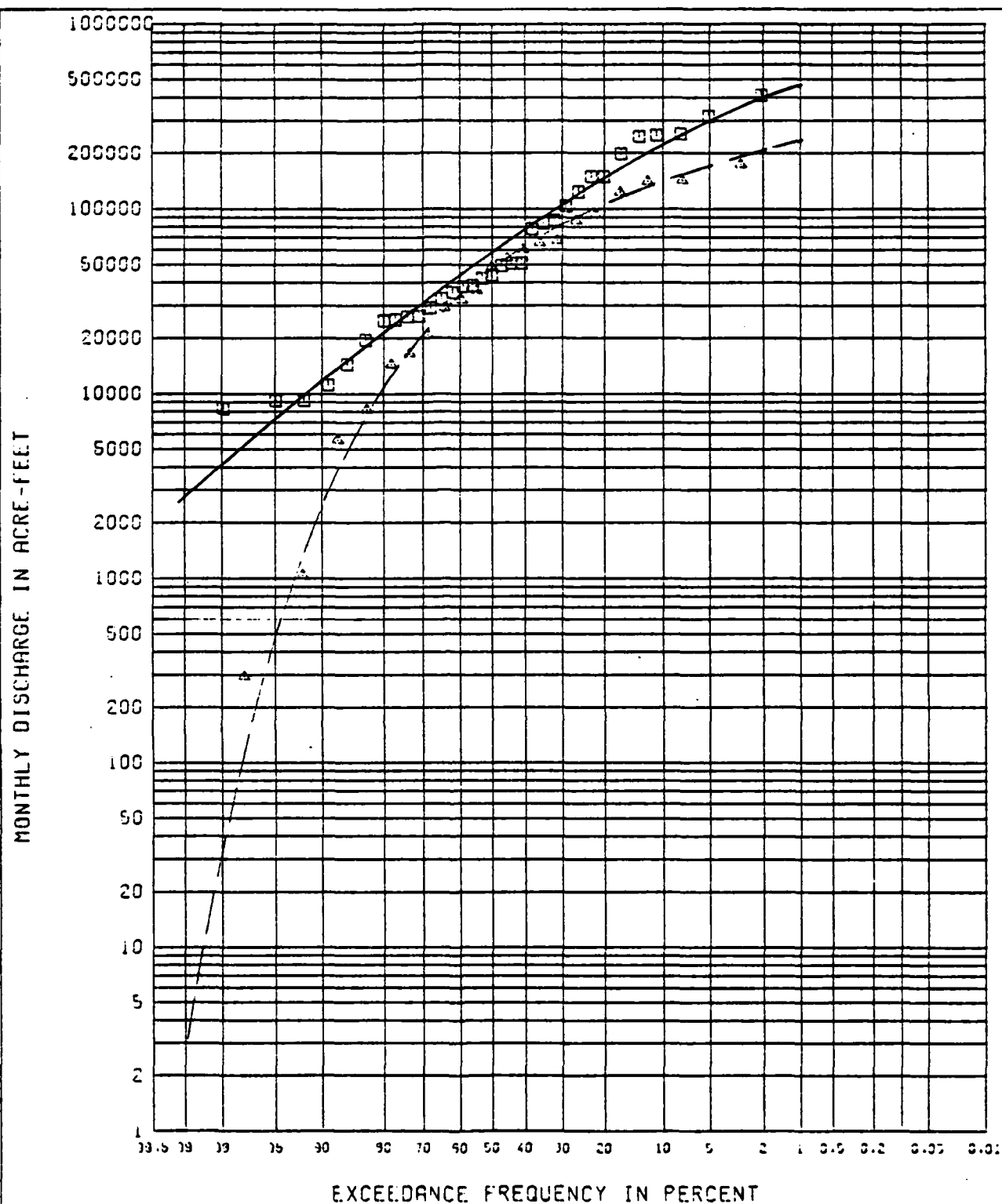
—■— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1957)

- - -▲- - POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1957-1973)

CYPRESS CREEK BASIN, TEXAS
LAKE OF THE PINES
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
APRIL FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 4



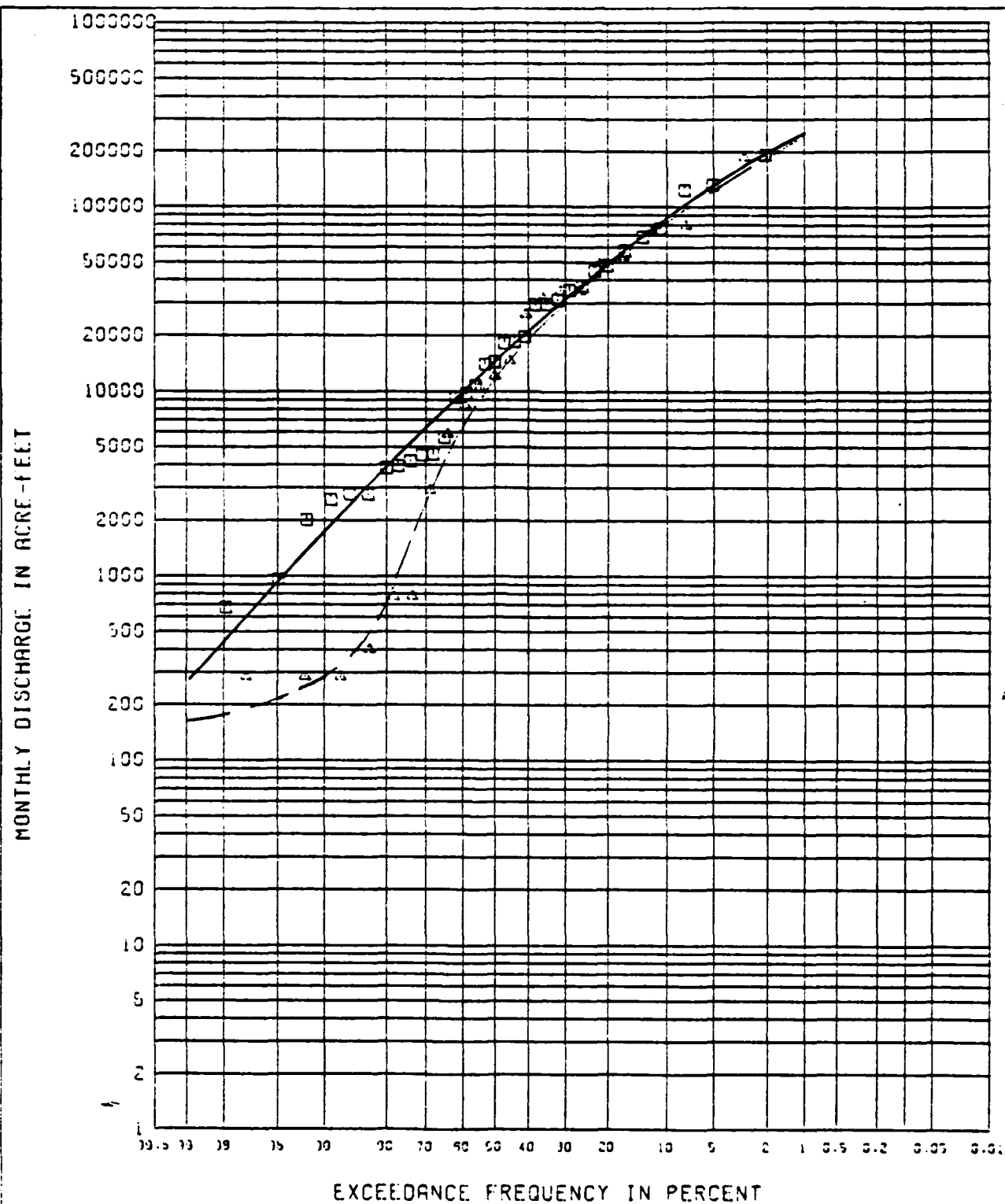
LEGEND

— PRE-IMPONDMENT CONDITIONS
(PERIOD OF RECORD 1924-1957)

— POST-IMPONDMENT CONDITIONS
(PERIOD OF RECORD 1959-1973)

CYPRESS CREEK BASIN, TEXAS
LAKE OF THE PINES
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
MAY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990



LEGEND

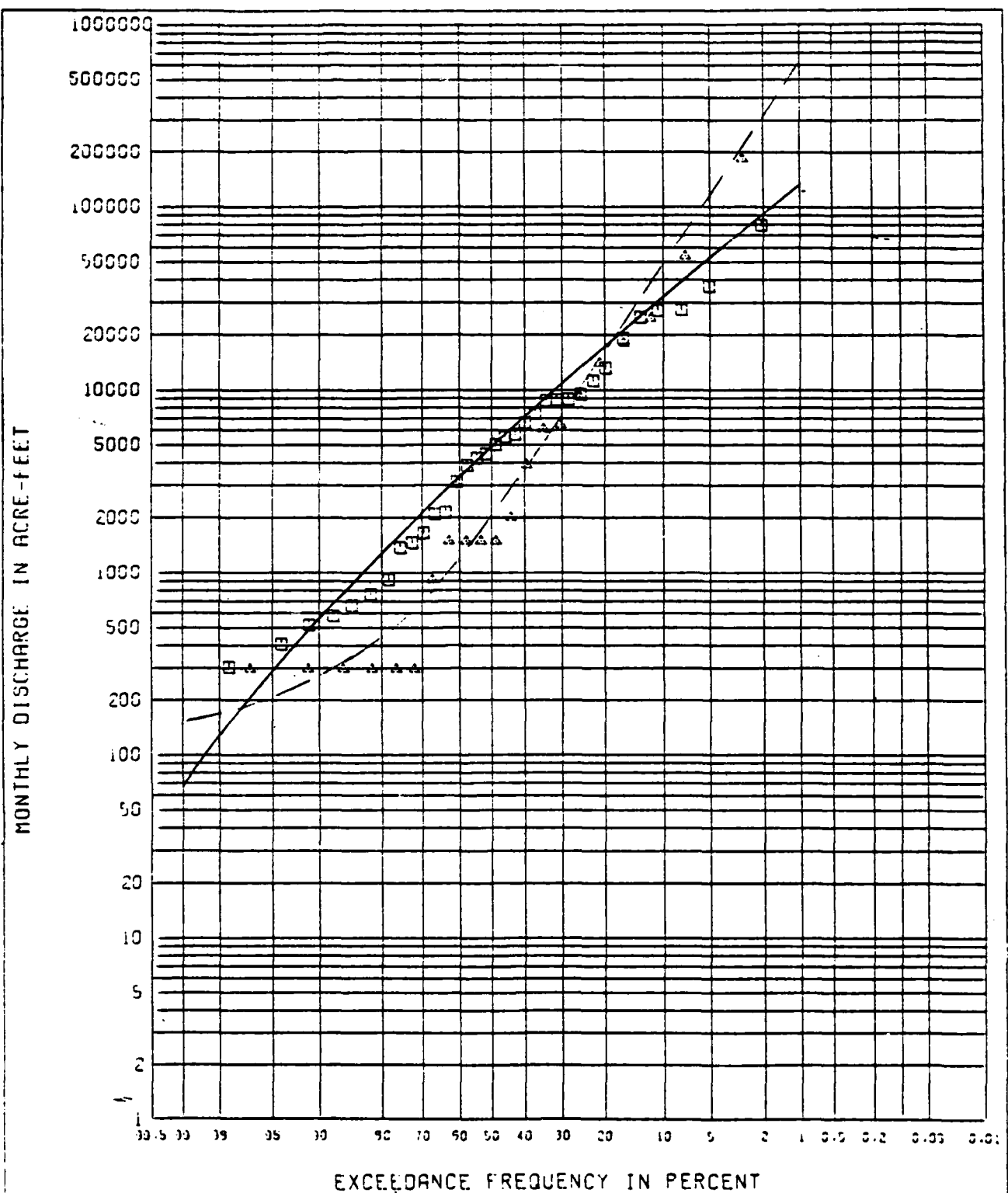
—■— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1957)

-▲- POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1959-1970)

CYPRESS CREEK BASIN, TEXAS
LAKE OF THE PINES
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
JUNE FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 6



LEGEND

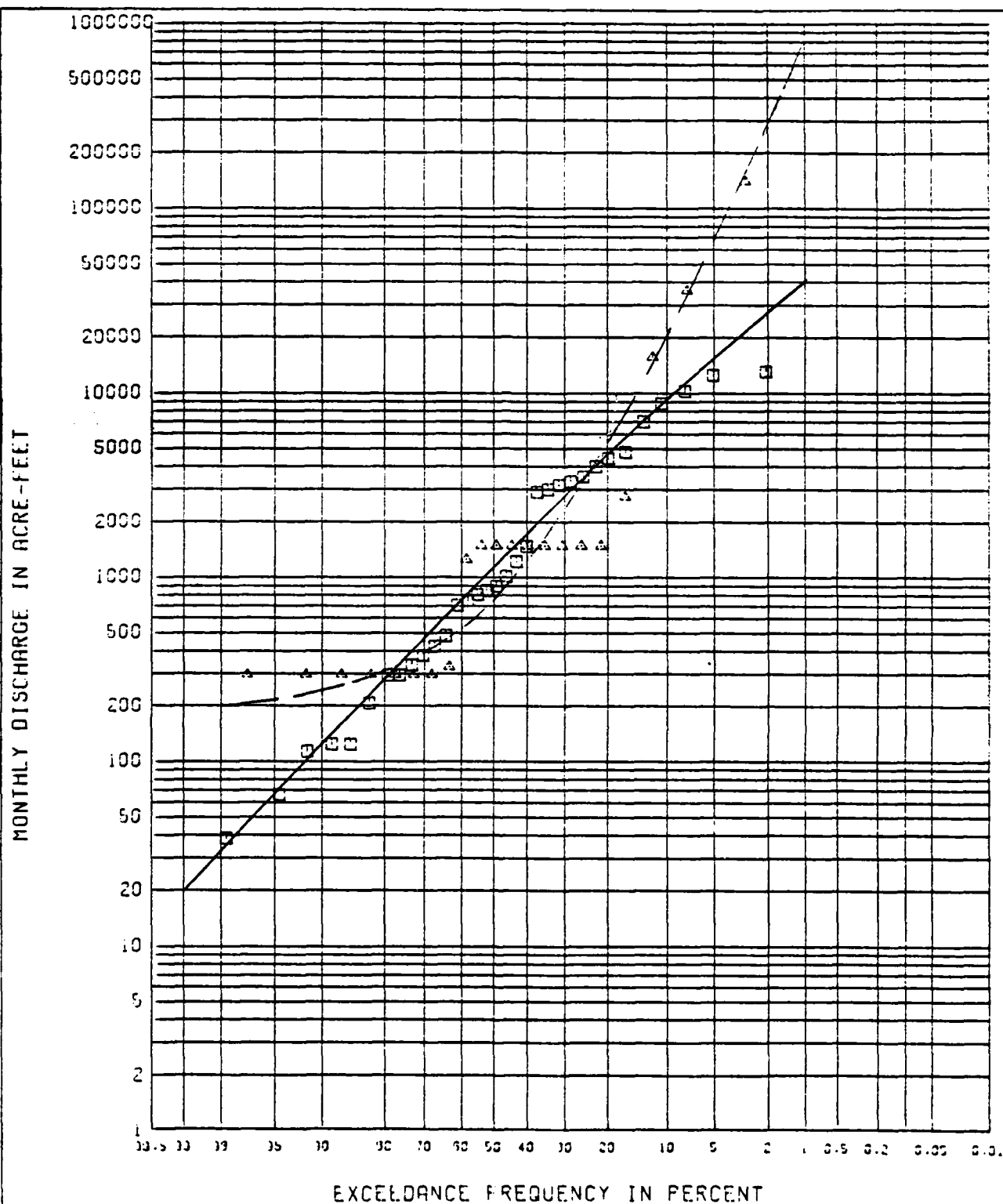
— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1957)

— POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1959-1970)

CYPRESS CREEK BASIN, TEXAS
LAKE OF THE PINES
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
JULY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 7



LEGEND

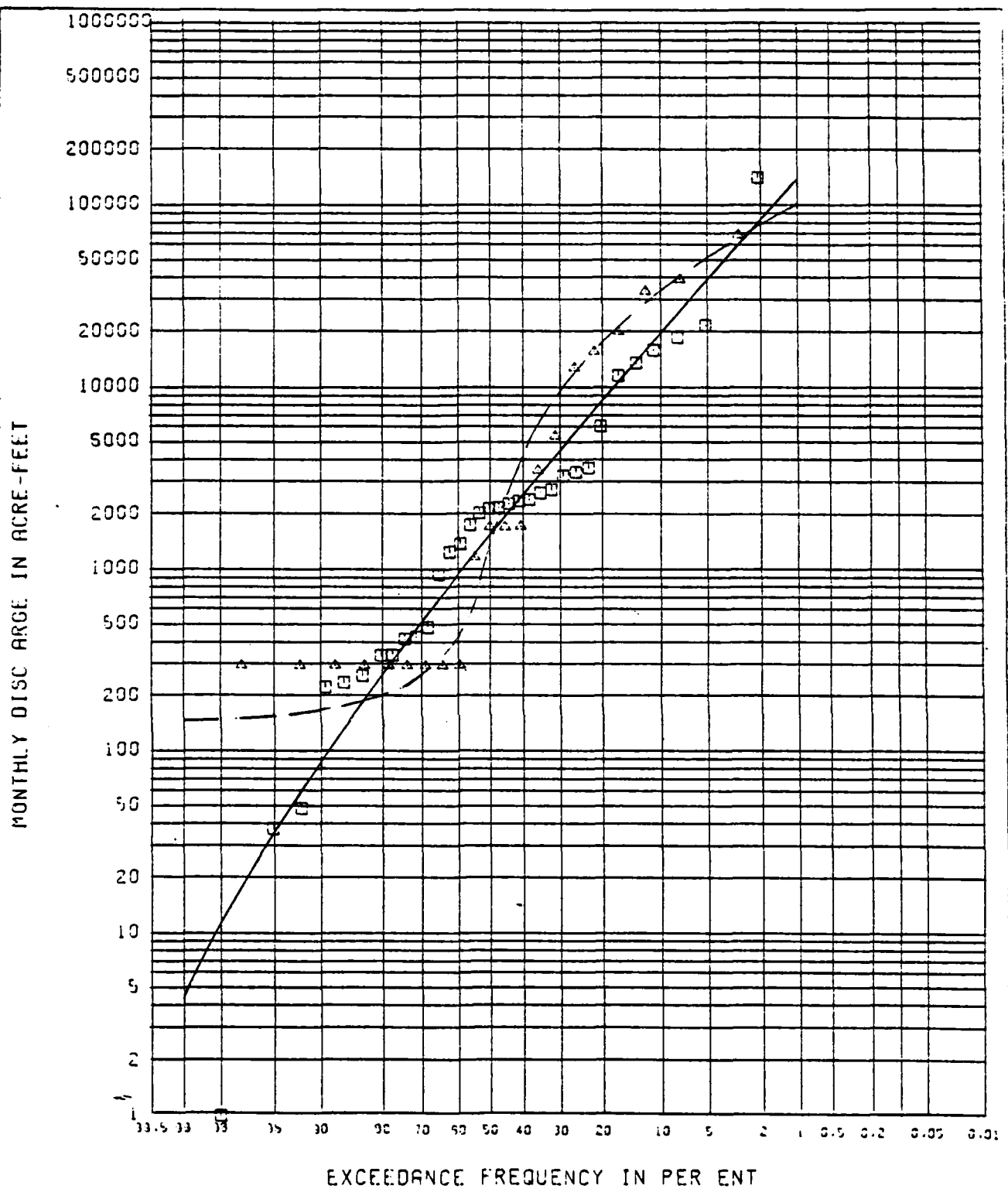
□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1957)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1959-1973)

CYPRESS CREEK BASIN, TEXAS
LAKE OF THE PINES
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
AUGUST FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 6



LEGEND

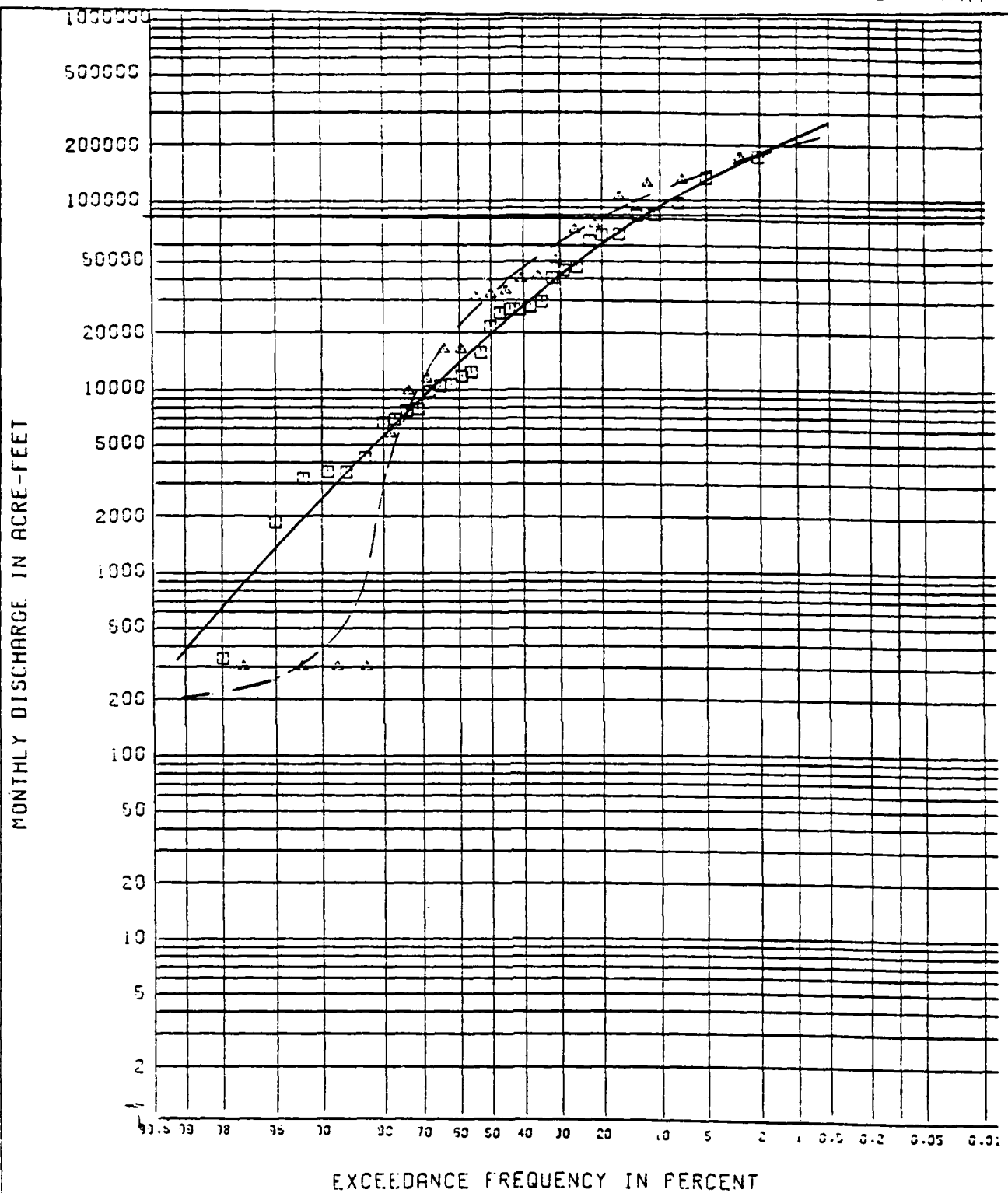
□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1957)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1959-1979)

CYPRESS CREEK BASIN, TEXAS
LAKE OF THE PINES
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
OCTOBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 10



LEGEND

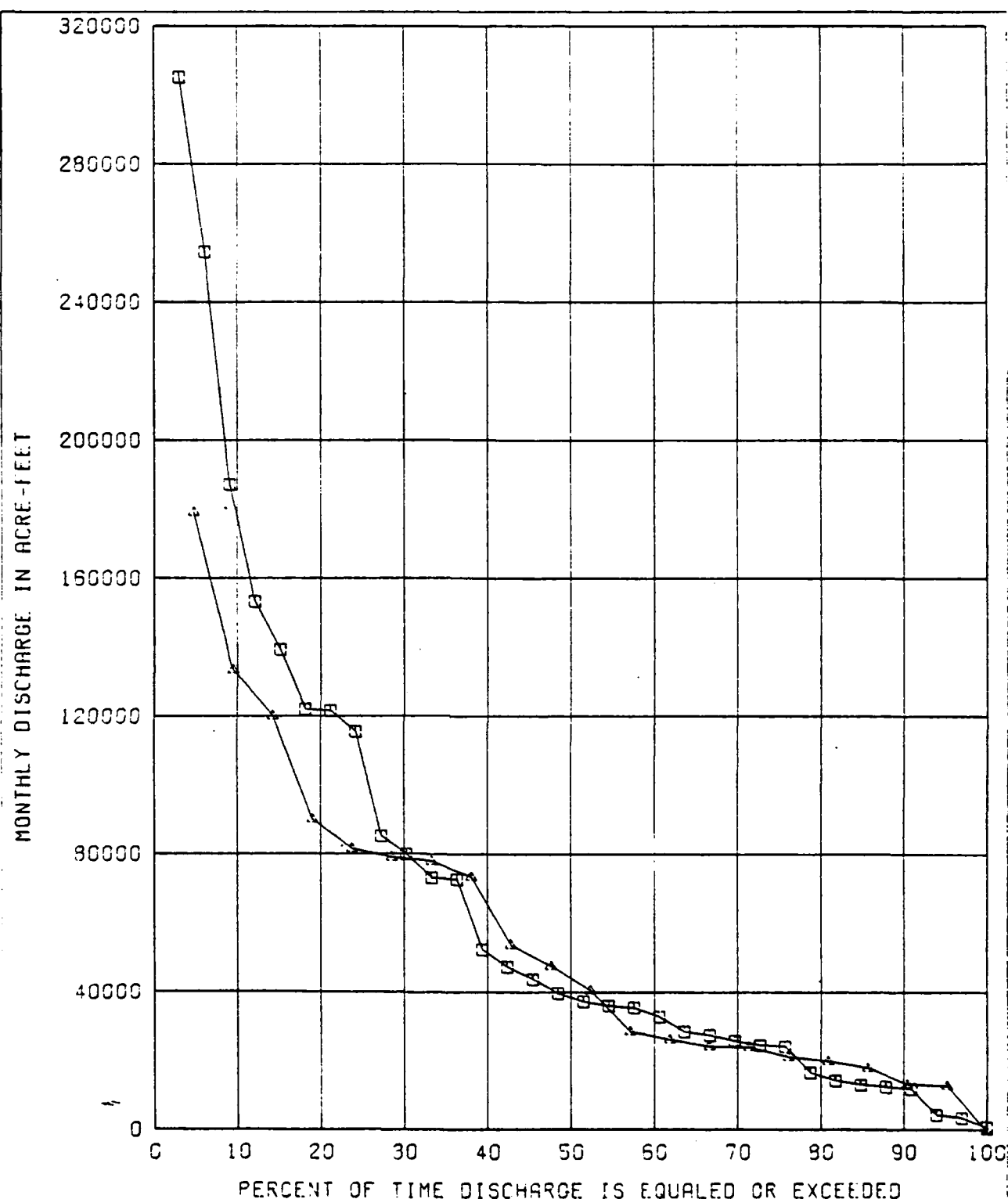
□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1957)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1958-1973)

CYPRESS CREEK BASIN, TEXAS
LAKE OF THE PINES
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
DECEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 12



LEGEND

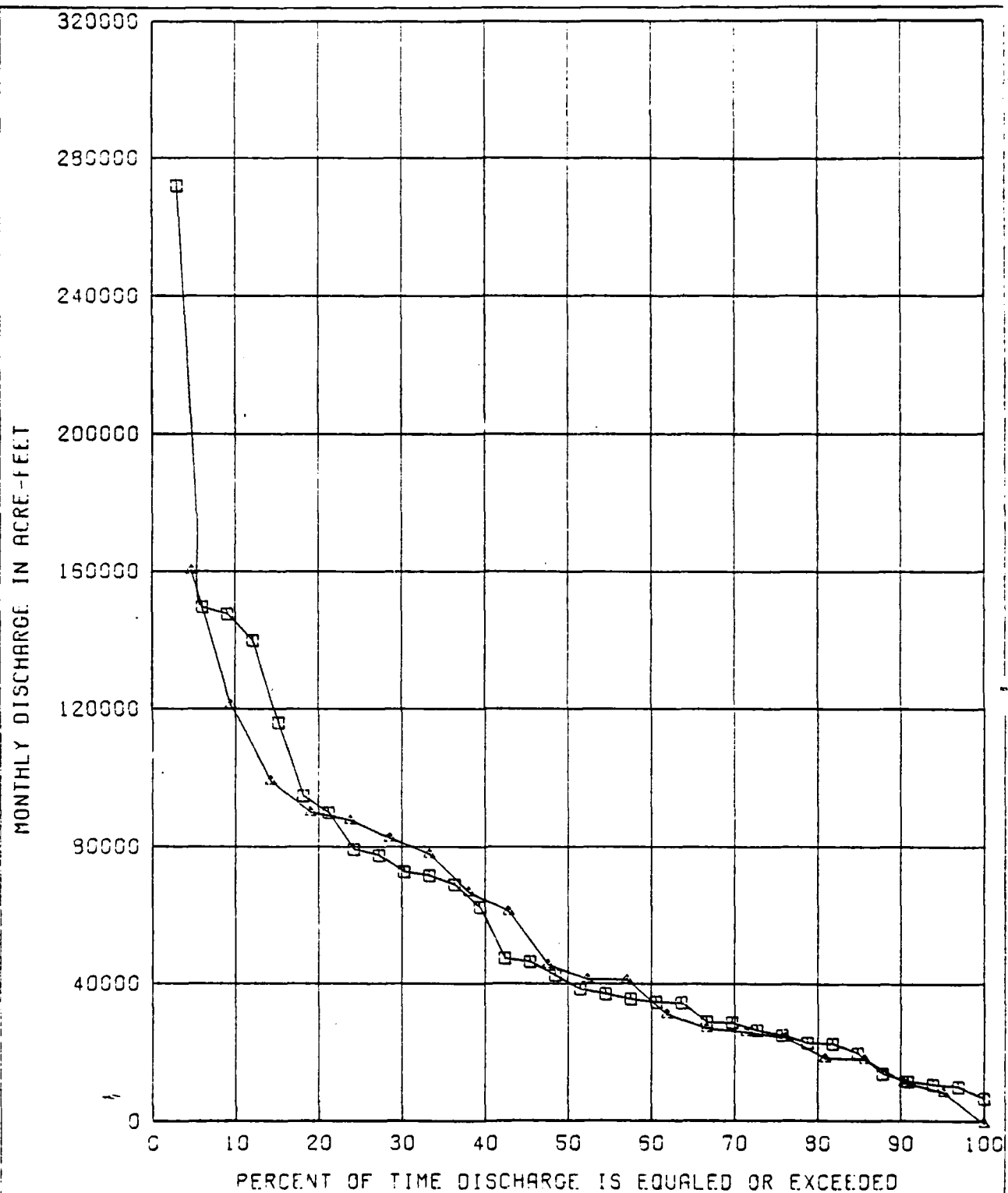
- — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1957)
- ▲ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1959-1979)

CYPRESS CREEK BASIN, TEXAS
LAKE OF THE PINES

FLOW DURATION CURVES AT DAM SITE
JANUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 13



LEGEND

□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1957)

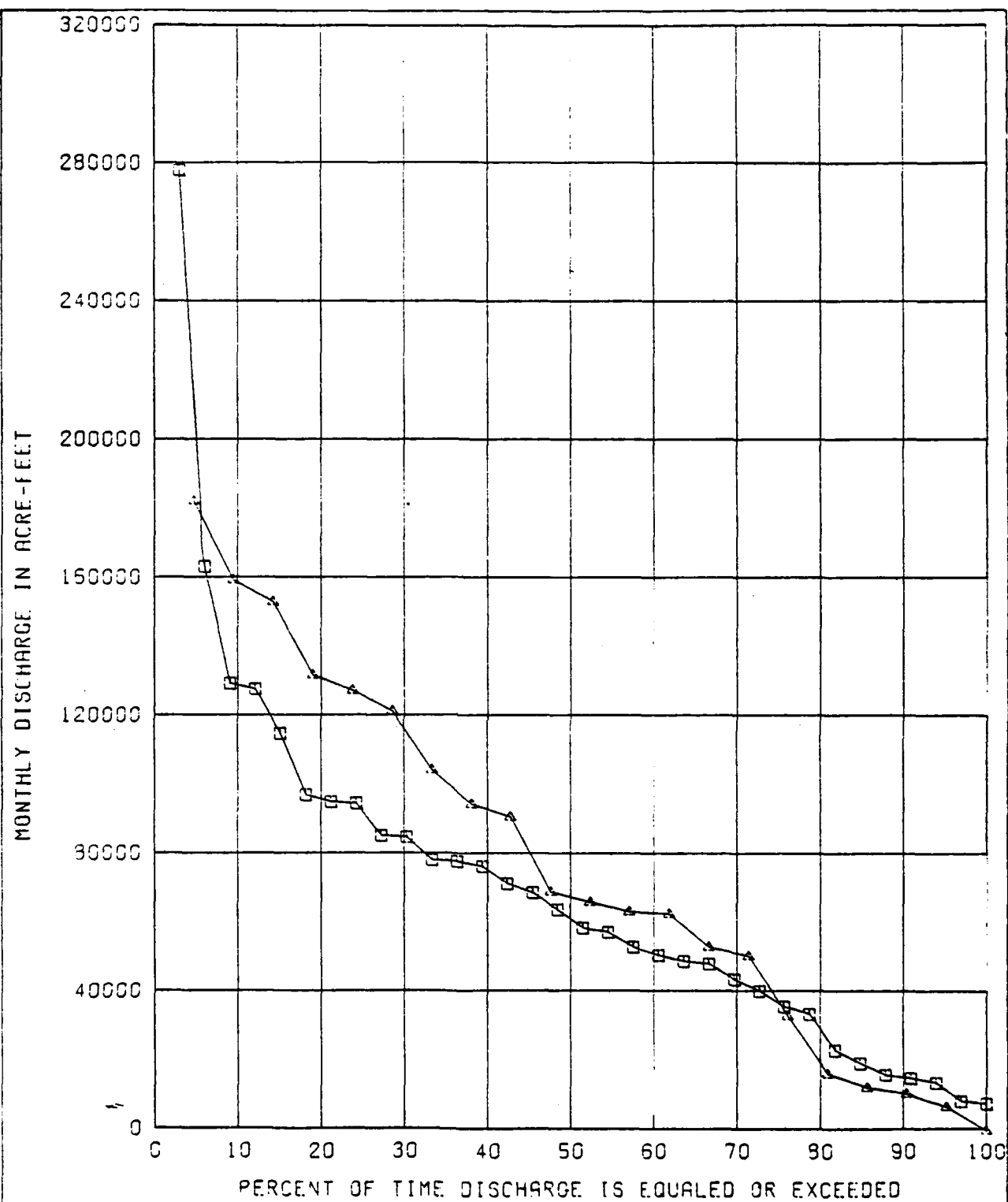
▲ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1959-1973)

CYPRESS CREEK BASIN, TEXAS
LAKE OF THE PINES

FLOW DURATION CURVES AT DAM SITE
FEBRUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 14



LEGEND

□ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1957)

△ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1959-1979)

CYPRESS CREEK BASIN, TEXAS

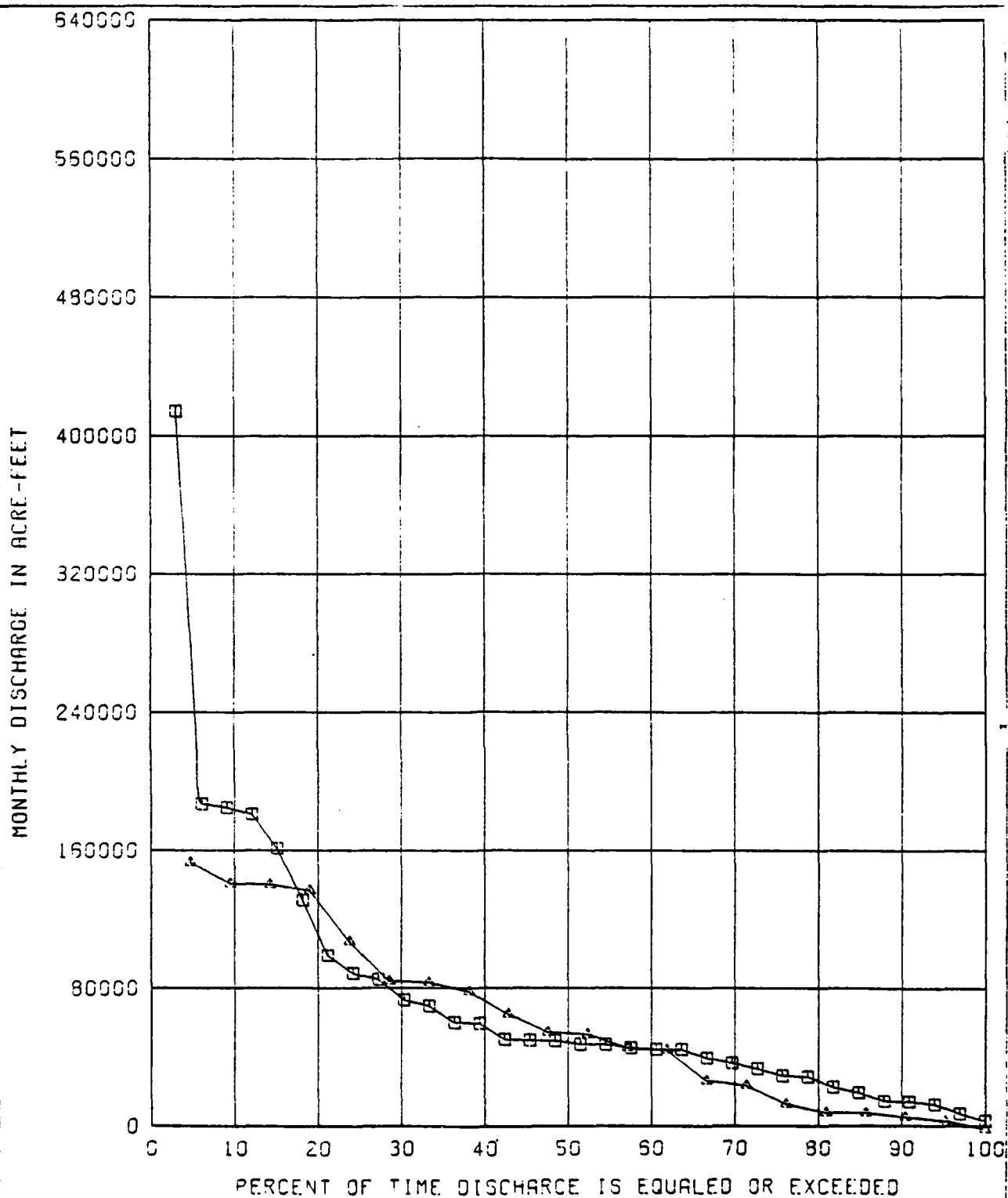
LAKE OF THE PINES

FLOW DURATION CURVES AT DAM SITE

MARCH FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 15



LEGEND

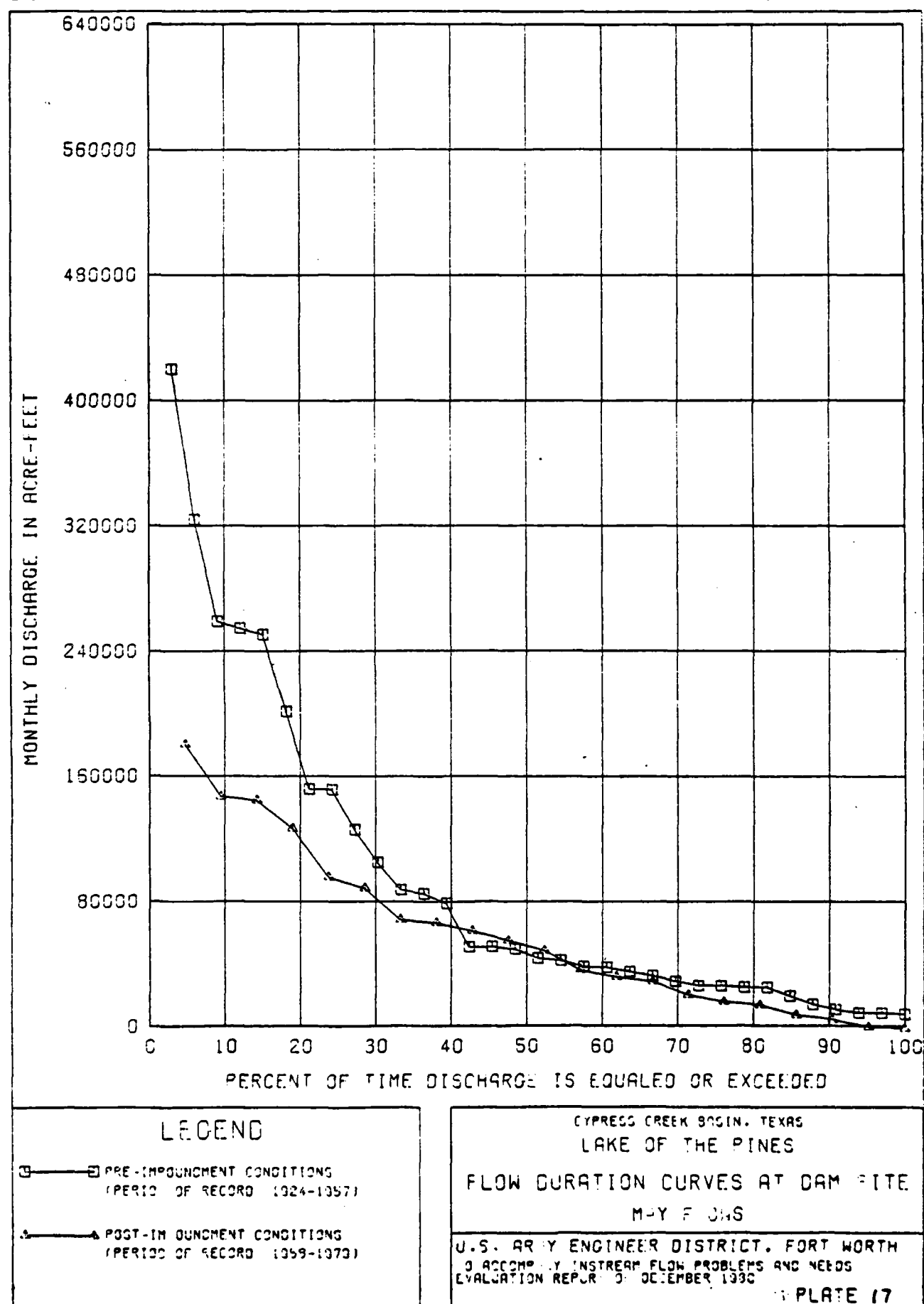
□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1957)

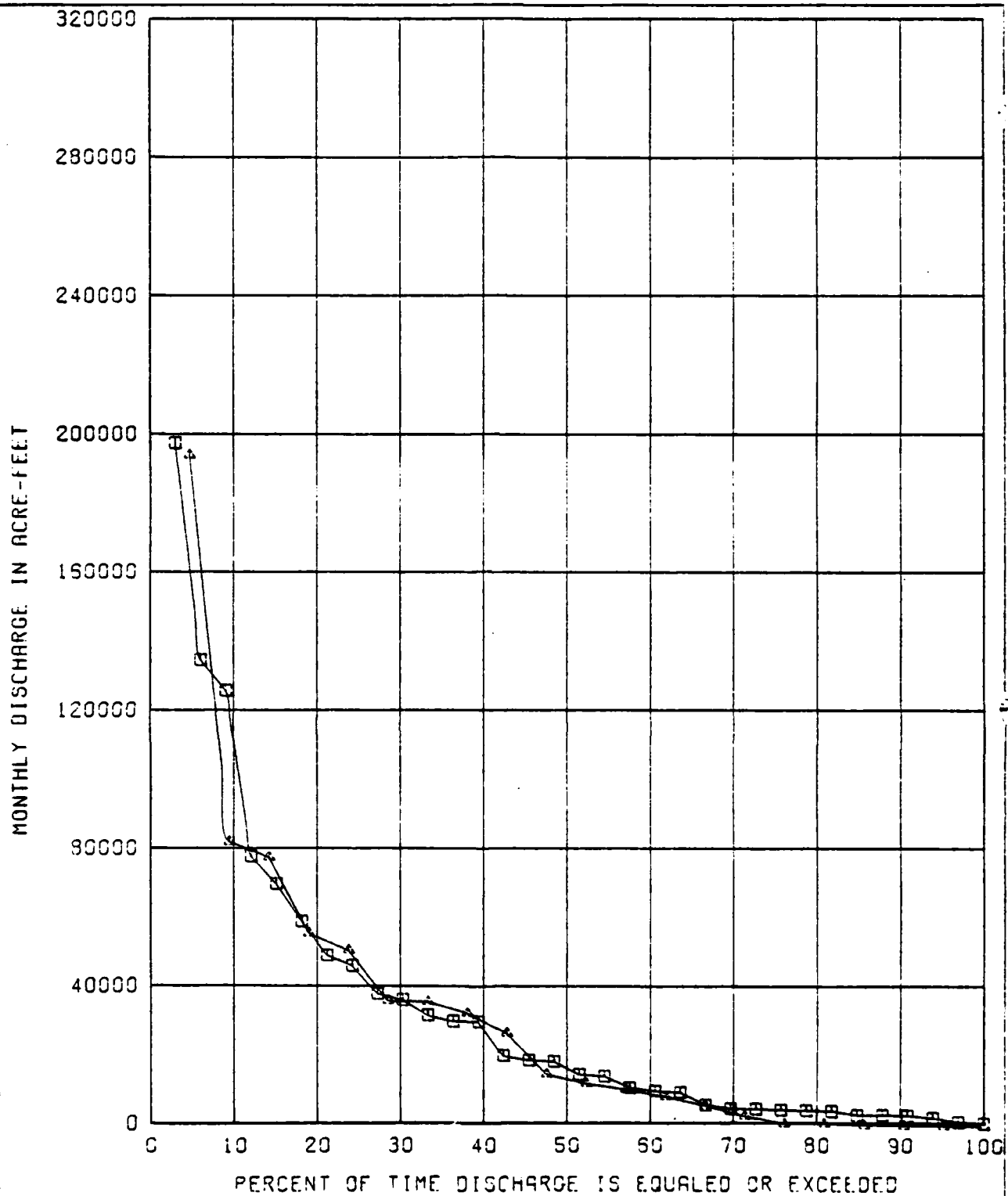
△ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1959-1973)

CYPRESS CREEK BASIN, TEXAS
LAKE OF THE PINES
FLOW DURATION CURVES AT DAM SITE
APRIL FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 16





LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1957)

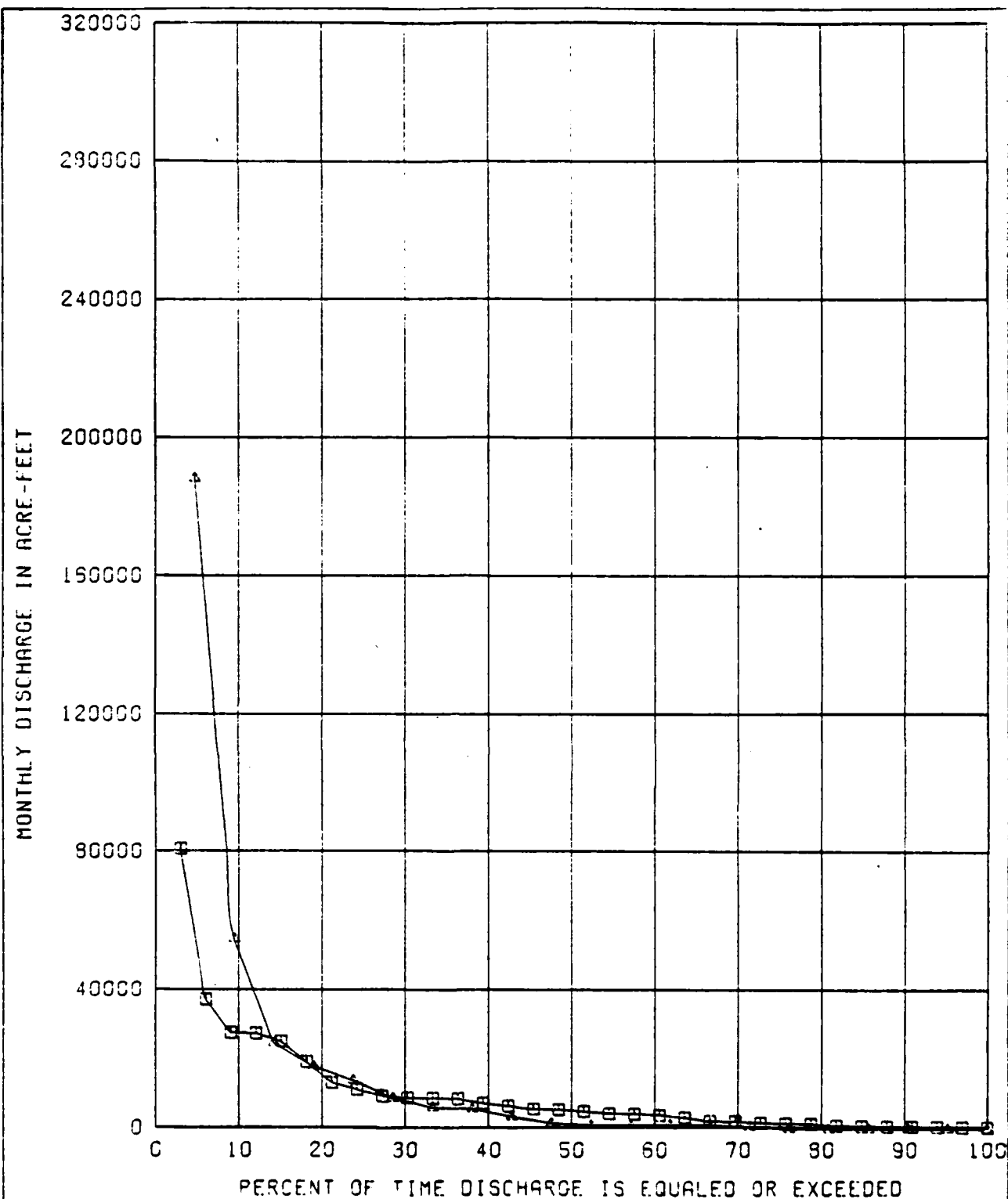
▲ — ▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1959-1973)

CYPRESS CREEK BASIN, TEXAS
LAKE OF THE PINES

FLOW DURATION CURVES AT DAM SITE
JUNE FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 18



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1957)

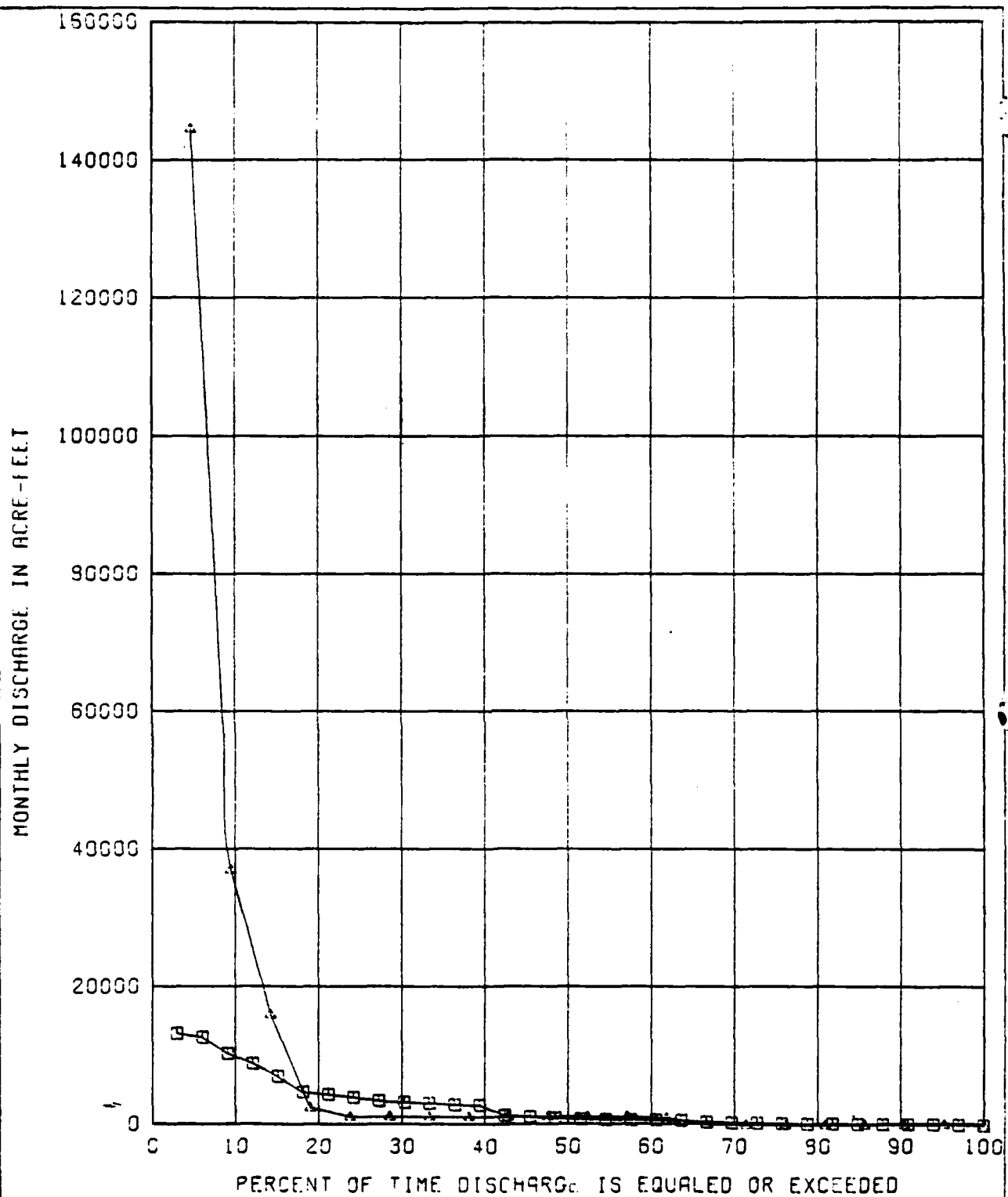
△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1959-1973)

CYPRESS CREEK BASIN, TEXAS
LAKE OF THE PINES

FLOW DURATION CURVES AT DAM SITE
JULY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1960

PLATE 19



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1957)

▲ — ▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1959-1973)

CYPRESS CREEK BASIN, TEXAS

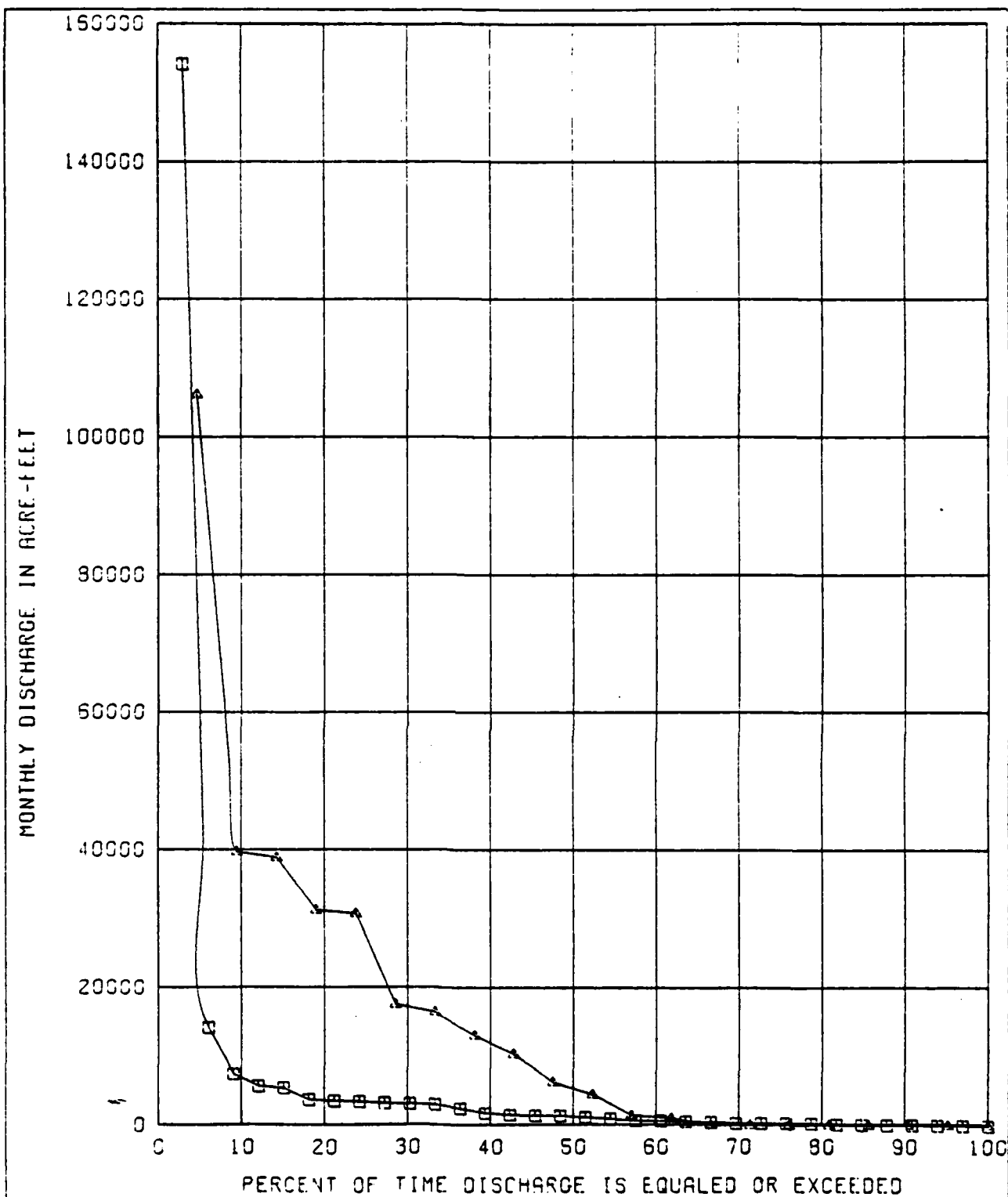
LAKE OF THE PINES

FLOW DURATION CURVES AT DAM SITE

AUGUST FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 20



LEGEND

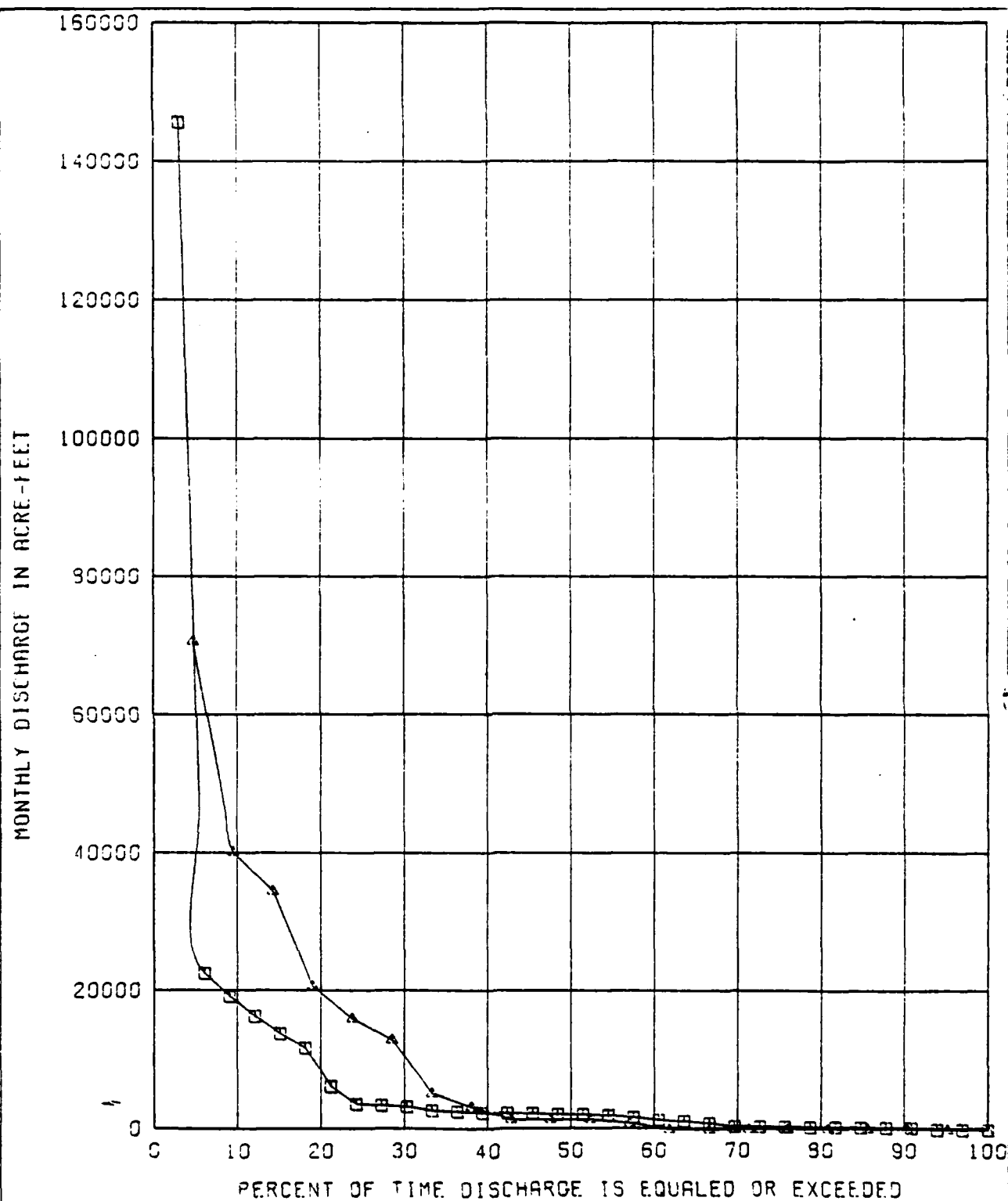
- PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1957)
- ▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1959-1979)

CYPRESS CREEK BASIN, TEXAS
LAKE OF THE PINES

FLOW DURATION CURVES AT DAM SITE
SEPTEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 21



LEGEND

□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1957)

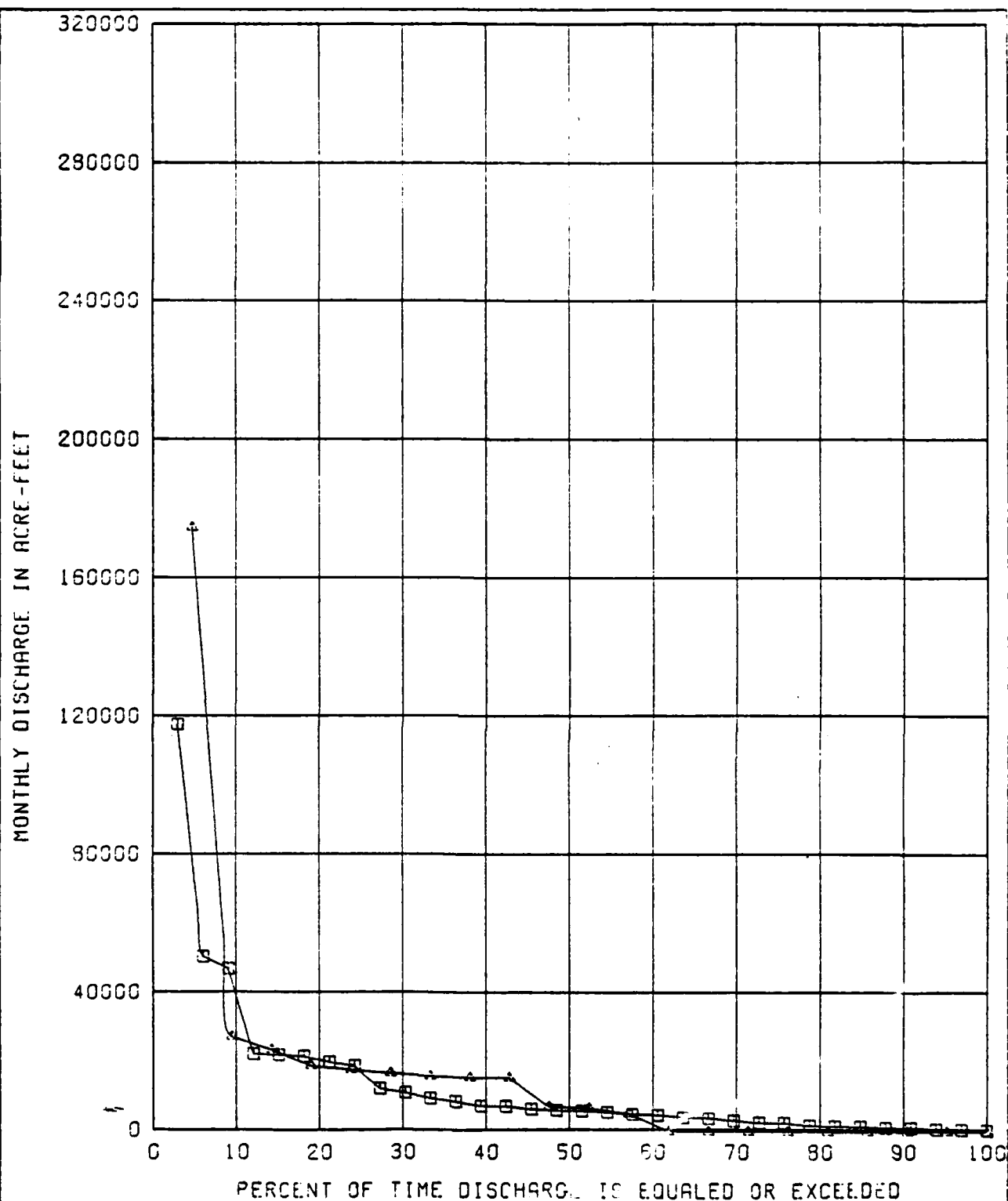
▲ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1958-1979)

CYPRESS CREEK BASIN, TEXAS
LAKE OF THE PINES

FLOW DURATION CURVES AT DAM SITE
OCTOBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 22



LEGEND

□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1957)

▲ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1959-1979)

CYPRESS CREEK BASIN, TEXAS

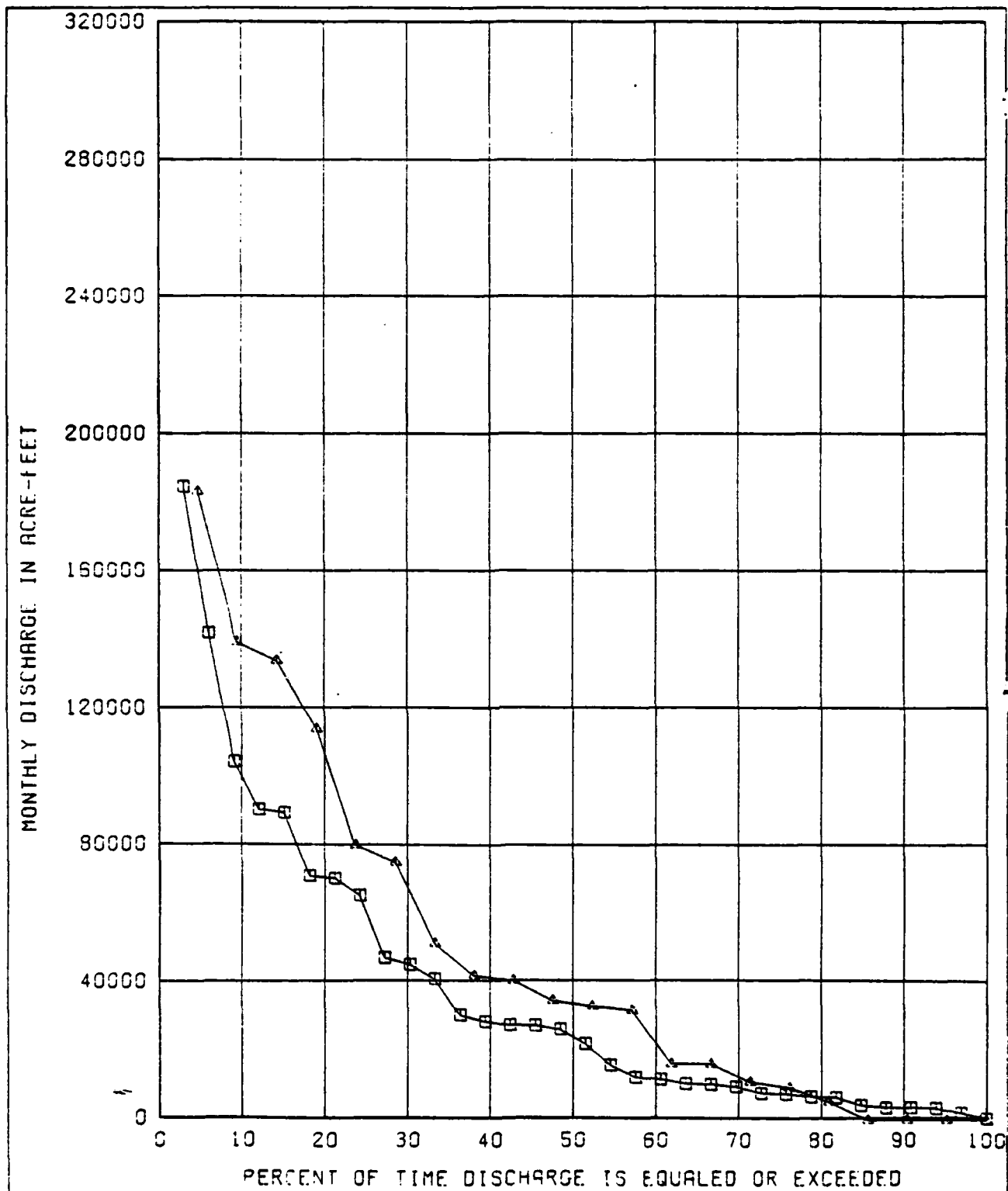
LAKE OF THE PINES

FLOW DURATION CURVES AT DAM SITE

NOVEMBER LOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF OCTOBER 1990

PLATE 23



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1957)

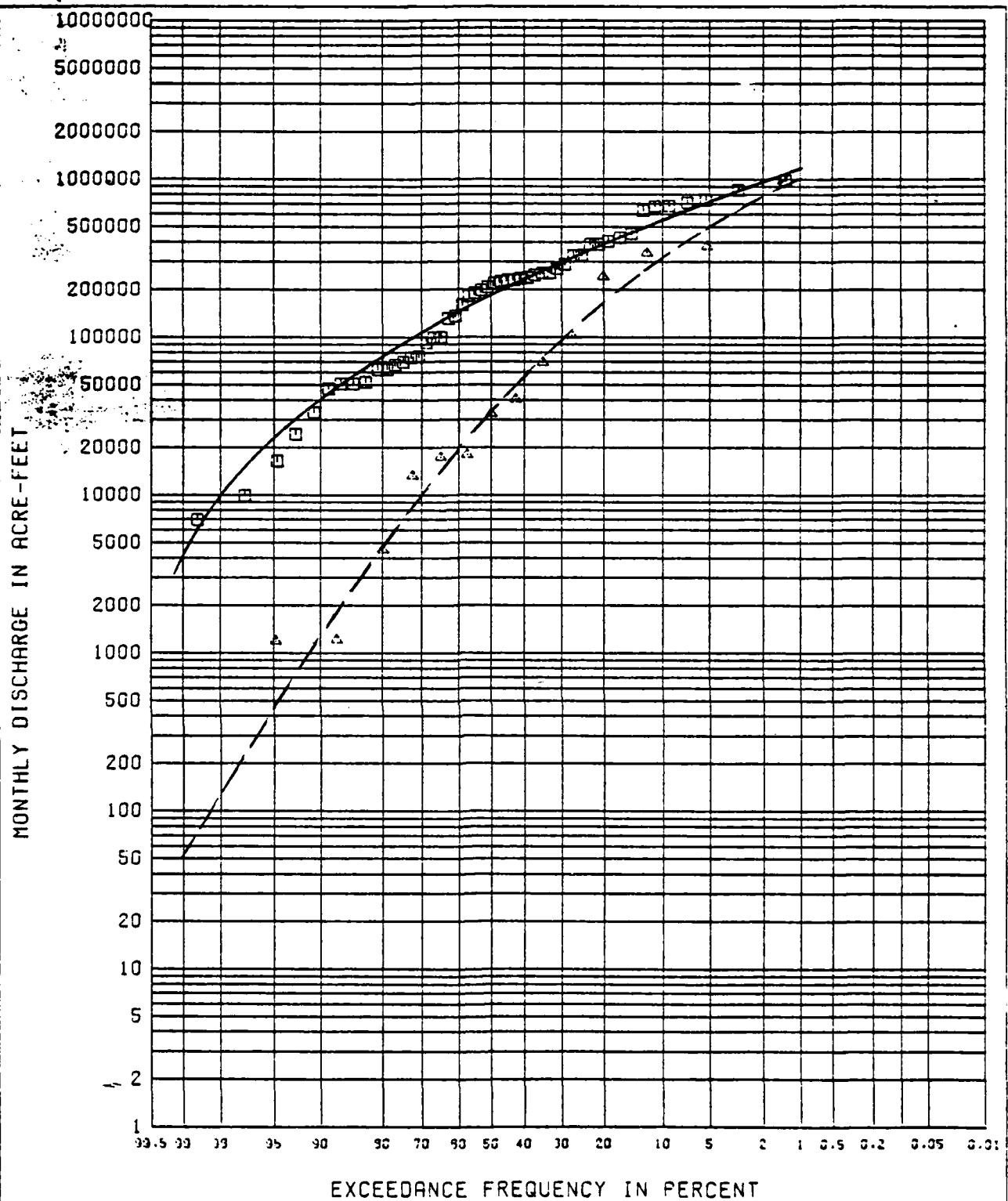
▲ — ▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1959-1979)

CYPRESS CREEK BASIN, TEXAS
LAKE OF THE PINES

FLOW DURATION CURVES AT DAM SITE
DECEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 24



LEGEND

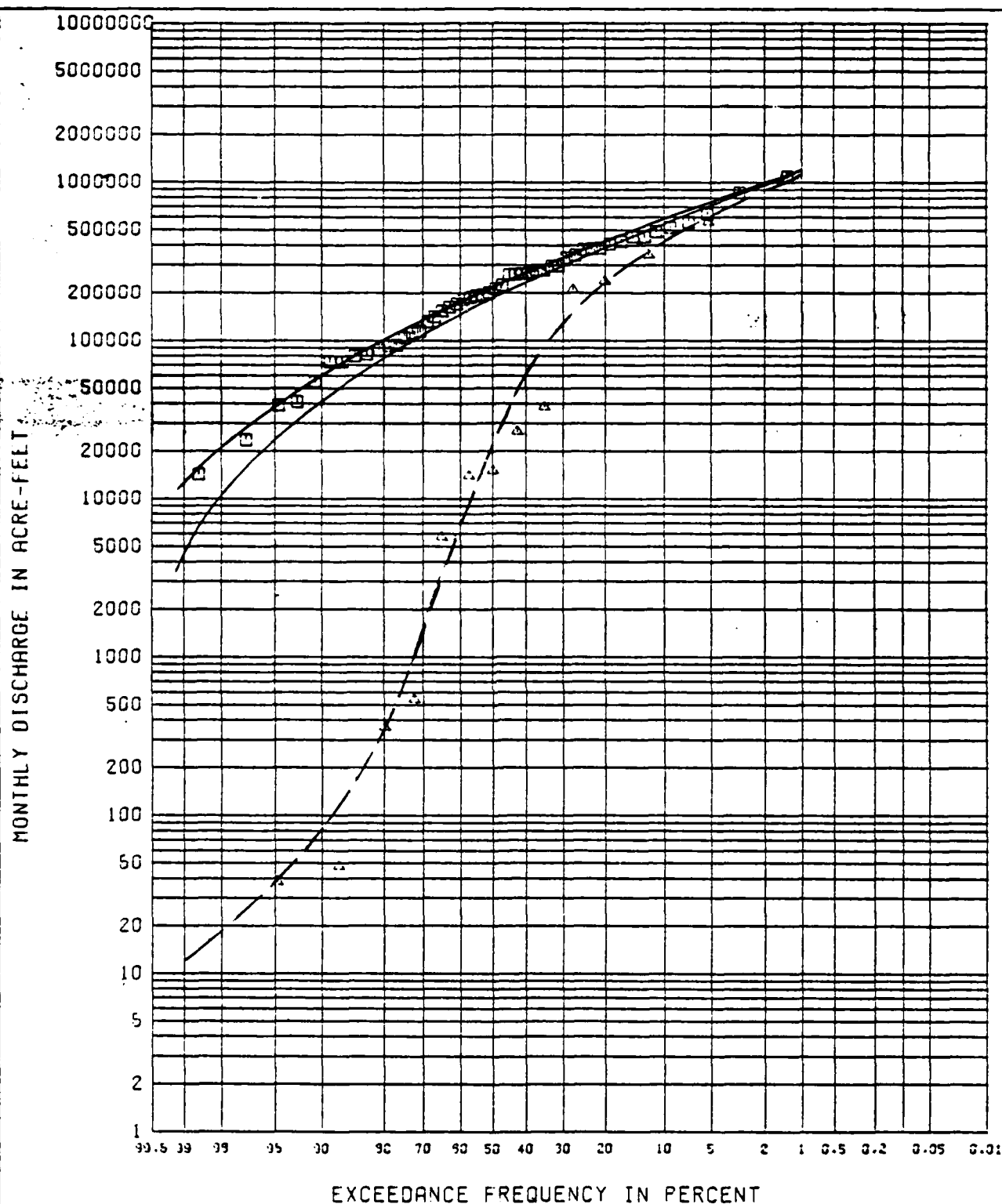
■ — ■ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1909-1957)

▲ — ▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1965-1978)

NECHES RIVER BASIN, TEXAS
SAM RAYBURN RESERVOIR
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
JANUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE I



LEGEND

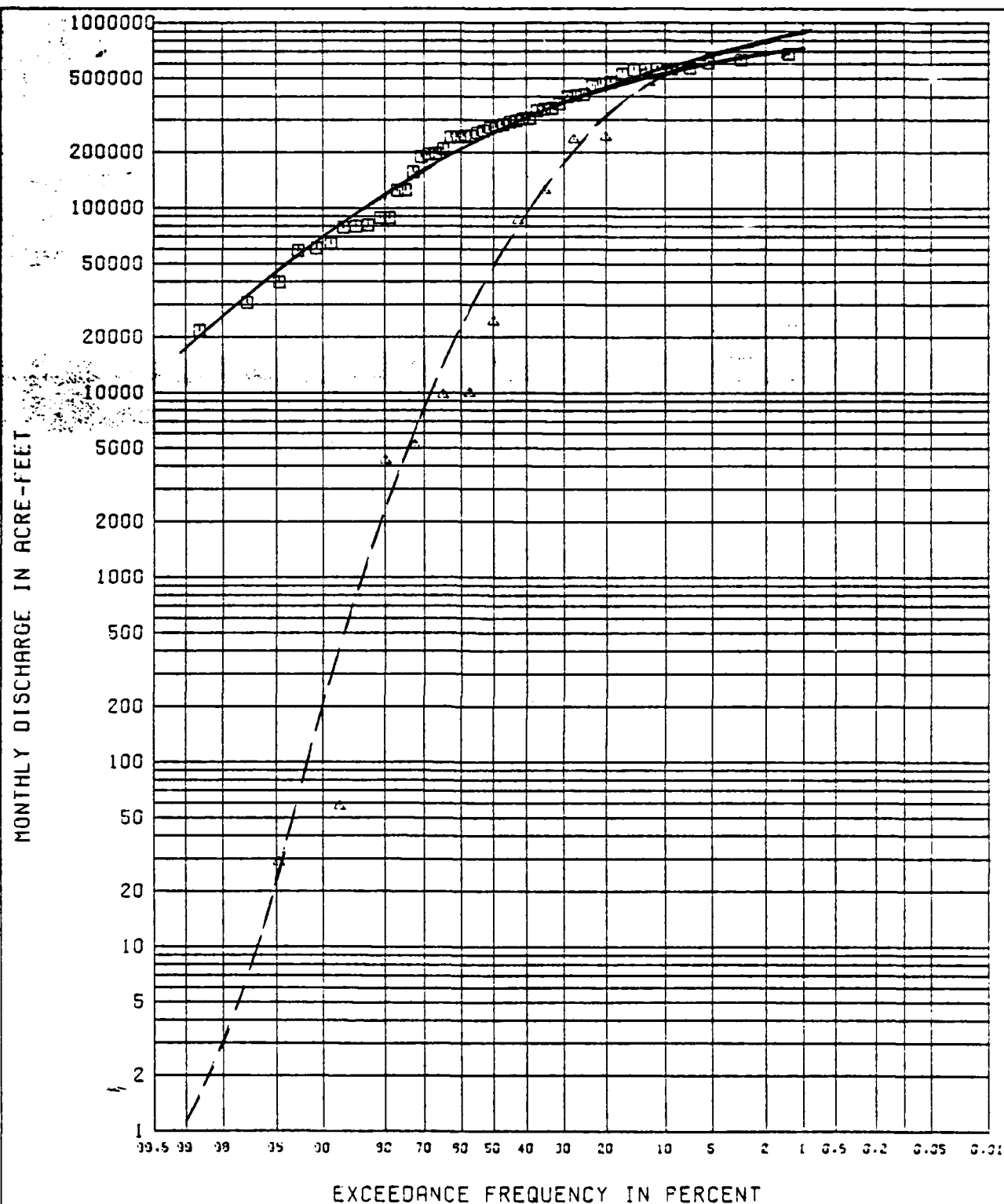
— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1909-1957)

- - - POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1955-1979)

NECHES RIVER BASIN, TEXAS
SAM RAYBURN RESERVOIR
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
FEBRUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 2



LEGEND

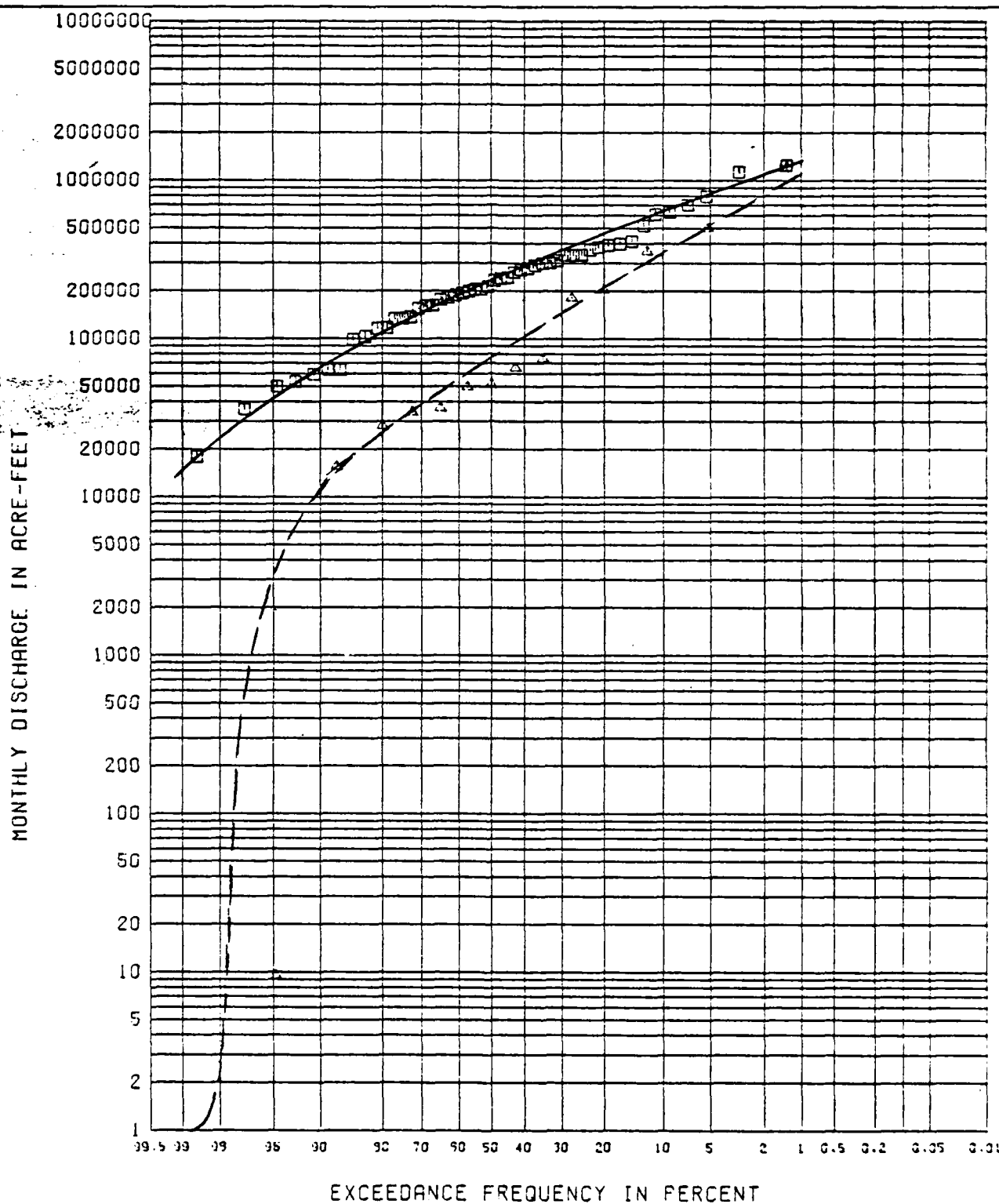
□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1909-1957)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1955-1979)

NECHES RIVER BASIN, TEXAS
SAM RAYBURN RESERVOIR
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
MARCH FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 3



LEGEND

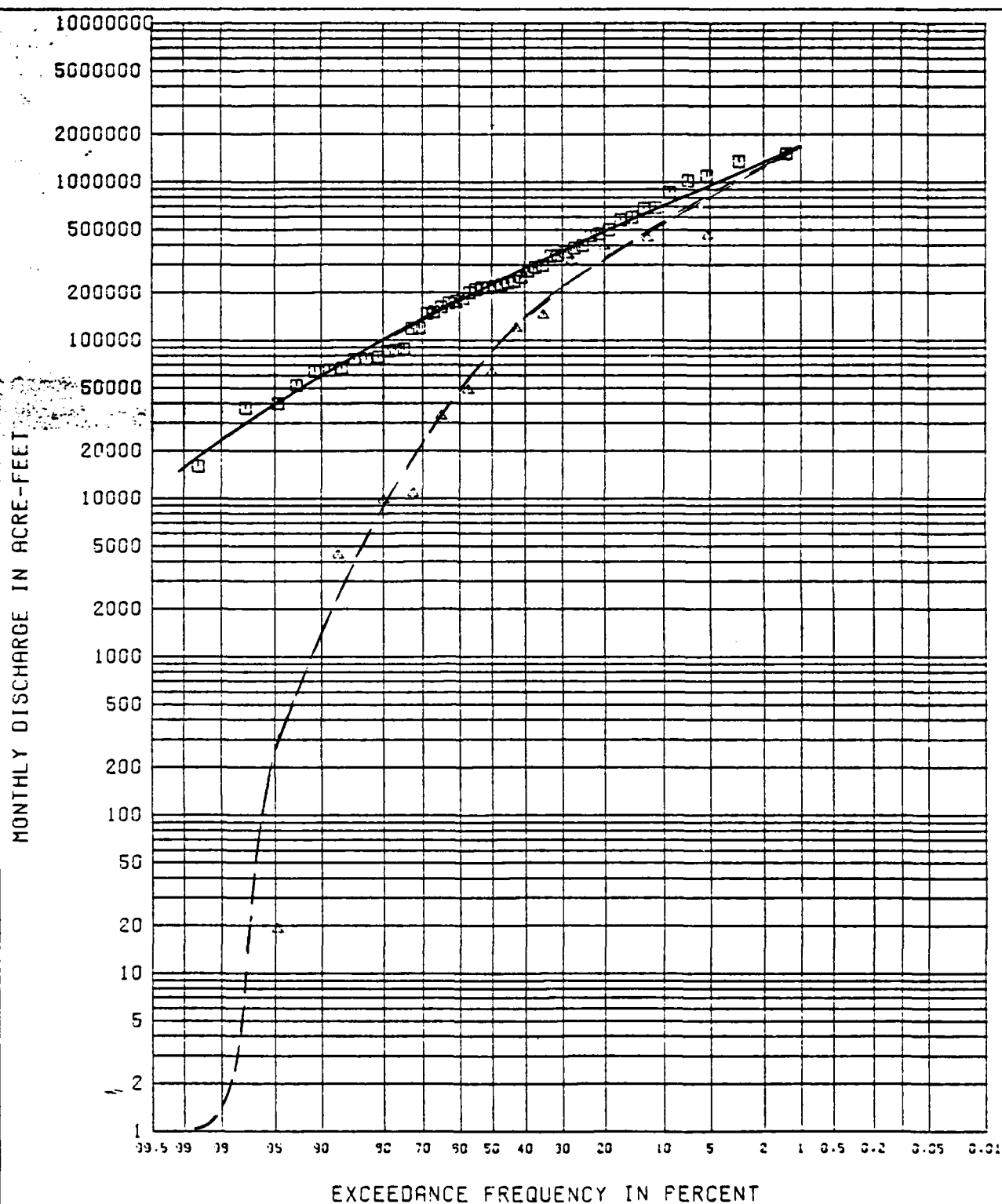
— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1909-1957)

— POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1965-1979)

NECHES RIVER BASIN, TEXAS
SAM RAYBURN RESERVOIR
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
APRIL FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 4



LEGEND

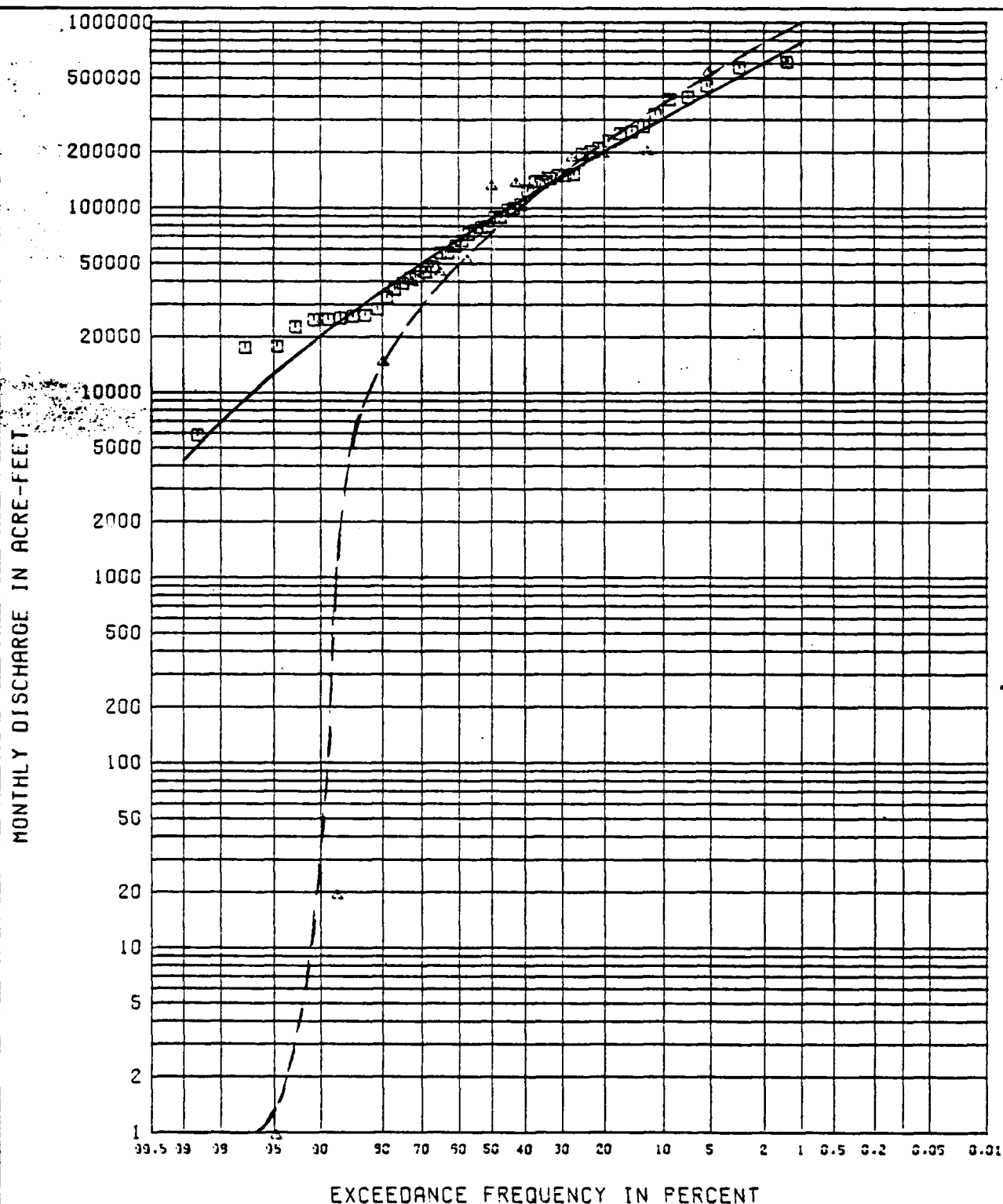
□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1909-1957)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1965-1979)

NECHES RIVER BASIN, TEXAS
SAM RAYBURN RESERVOIR
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
MAY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 5



LEGEND

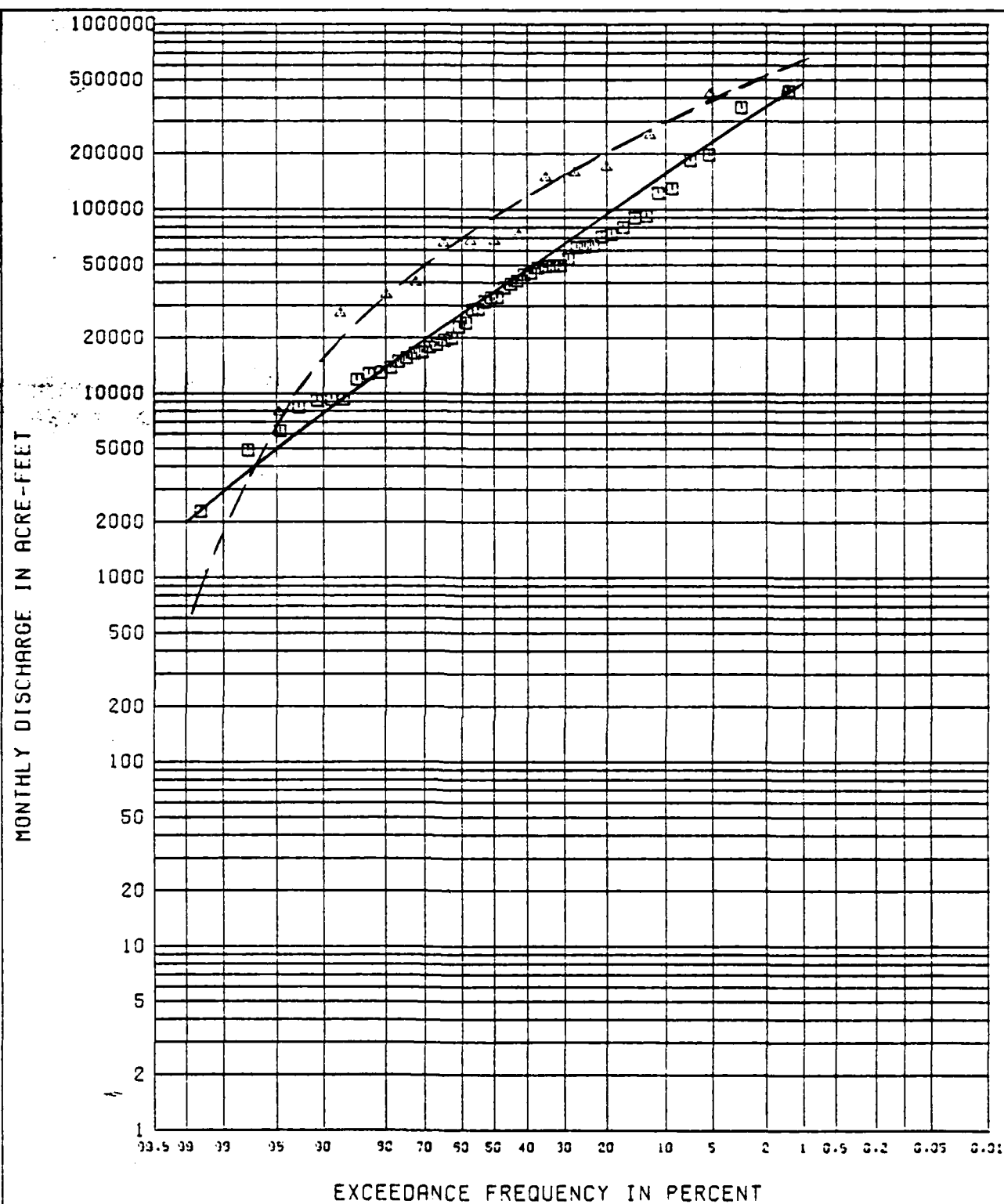
□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1909-1957)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1965-1979)

NECHES RIVER BASIN, TEXAS
SAM RAYBURN RESERVOIR
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
JUNE FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 6



LEGEND

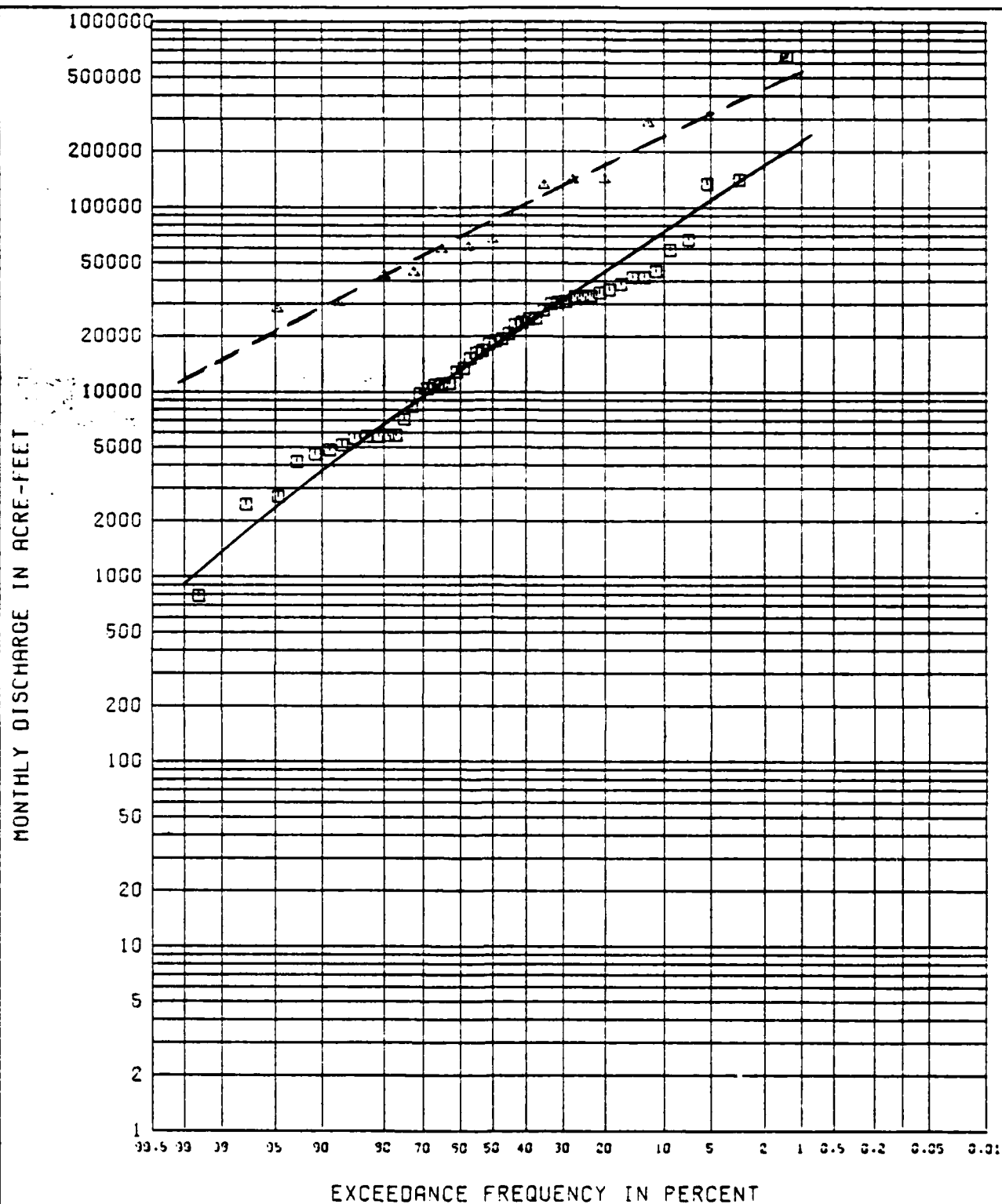
□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1909-1957)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1965-1979)

NECHES RIVER BASIN, TEXAS
SAM RAYBURN RESERVOIR
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
JULY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER, 1980

PLATE 7



LEGEND

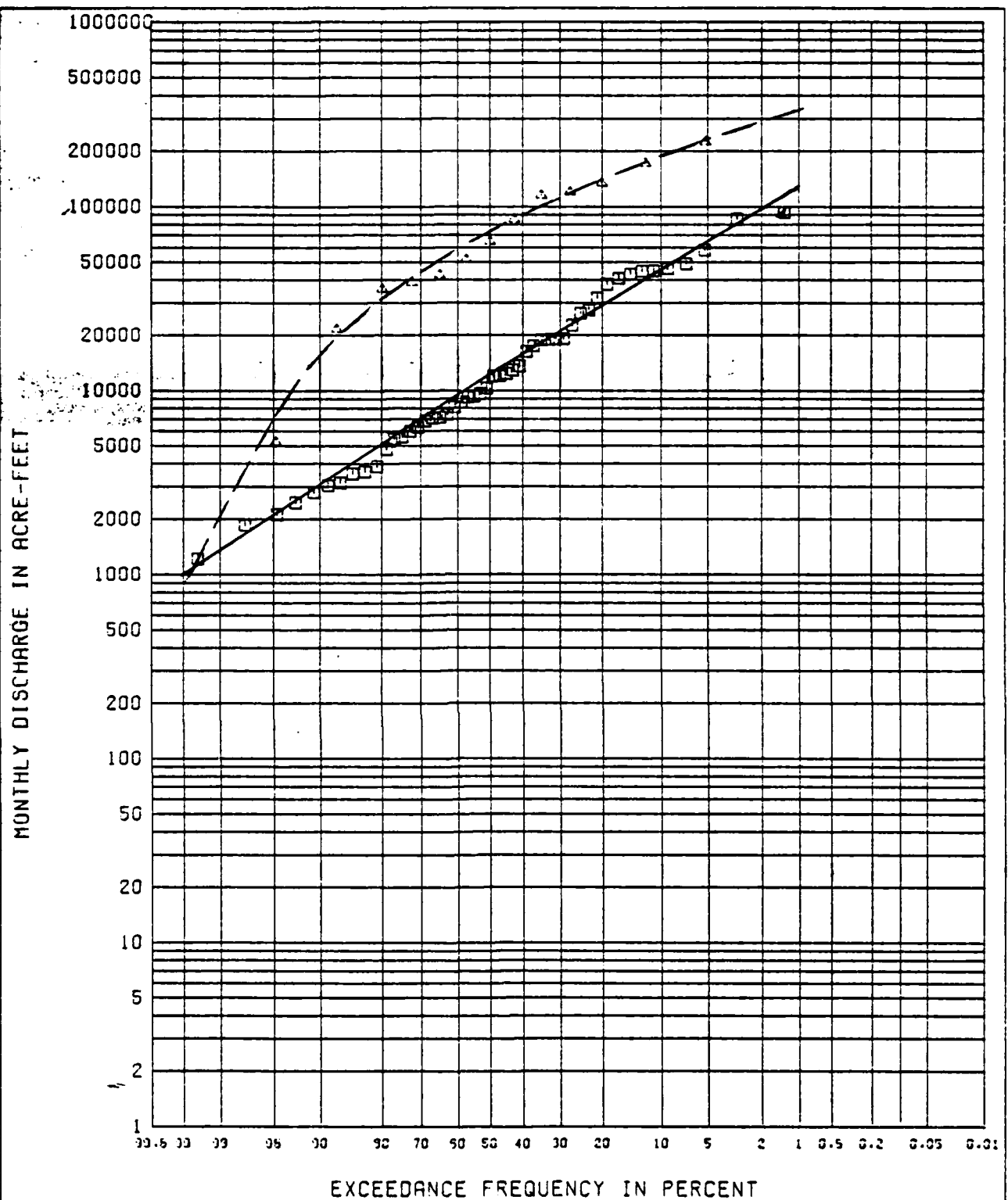
□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1909-1957)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1965-1979)

NECHES RIVER BASIN, TEXAS
SAM RAYBURN RESERVOIR
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
AUGUST FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 8



LEGEND

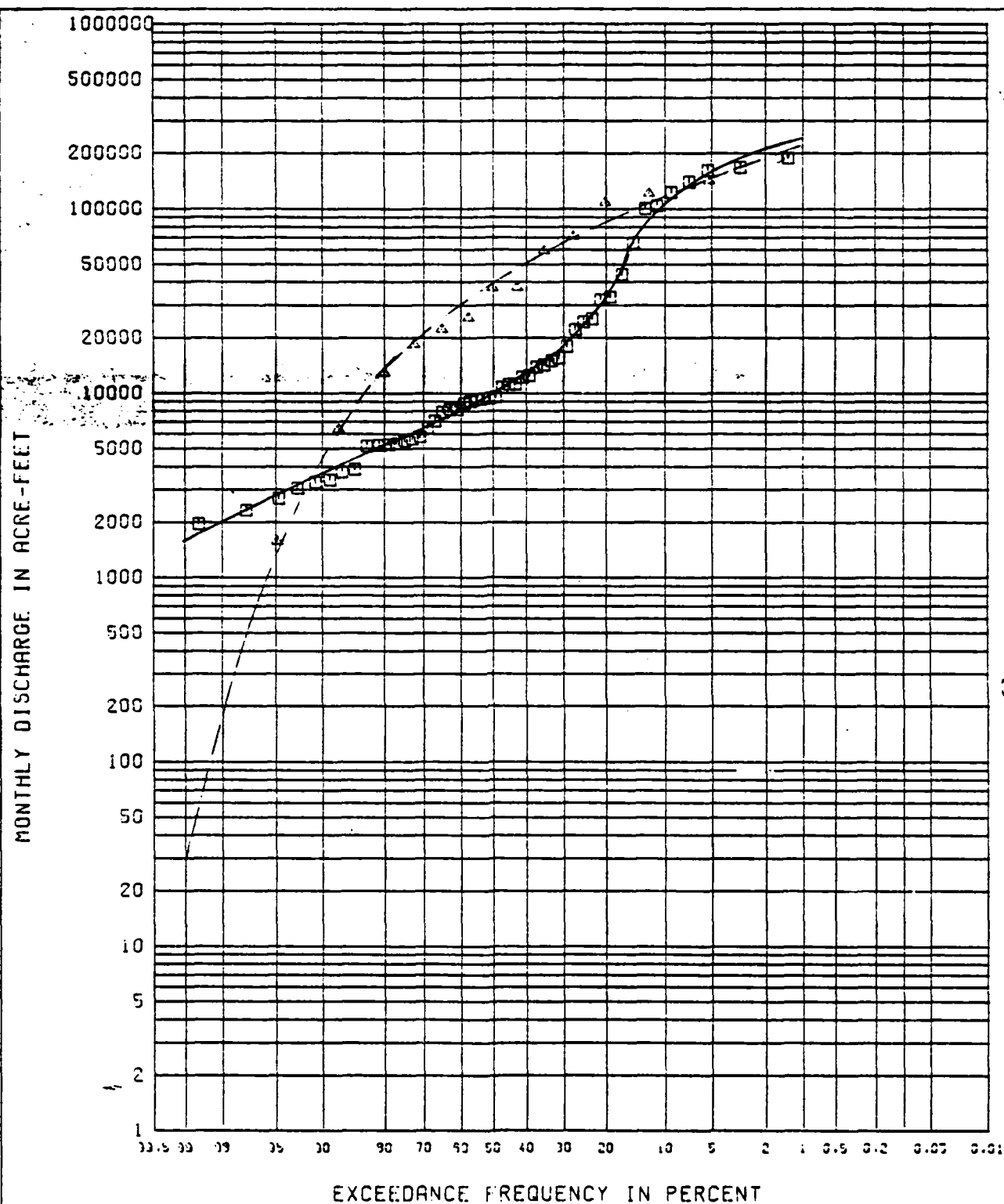
□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1909-1957)

△ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1965-1979)

NECHES RIVER BASIN, TEXAS
SAM RAYBURN RESERVOIR
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
SEPTEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 9



LEGEND

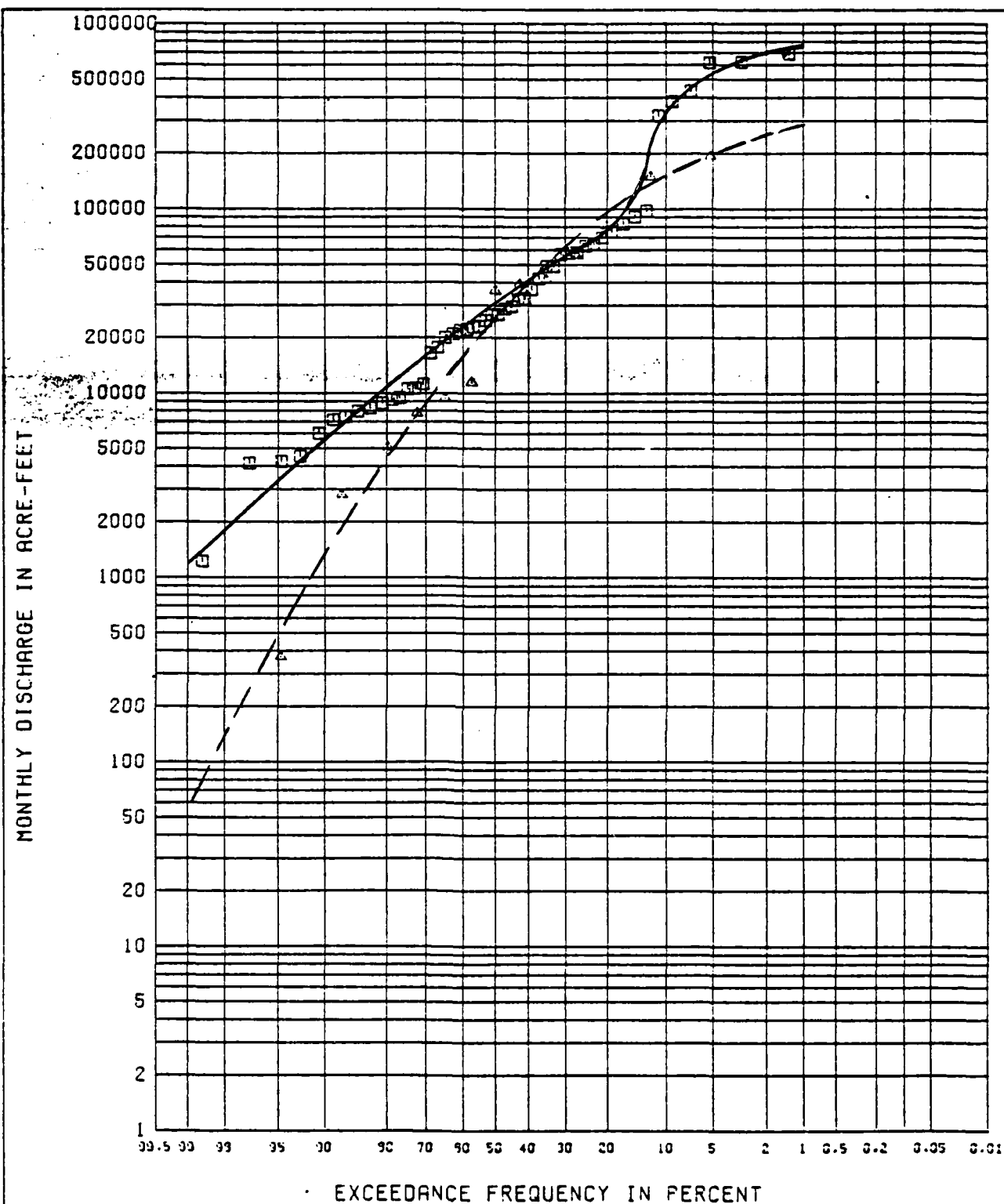
—■— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1909-1957)

- - -▲- POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1965-1979)

NECHES RIVER BASIN, TEXAS
SAM RAYBURN RESERVOIR
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
OCTOBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 10



LEGEND

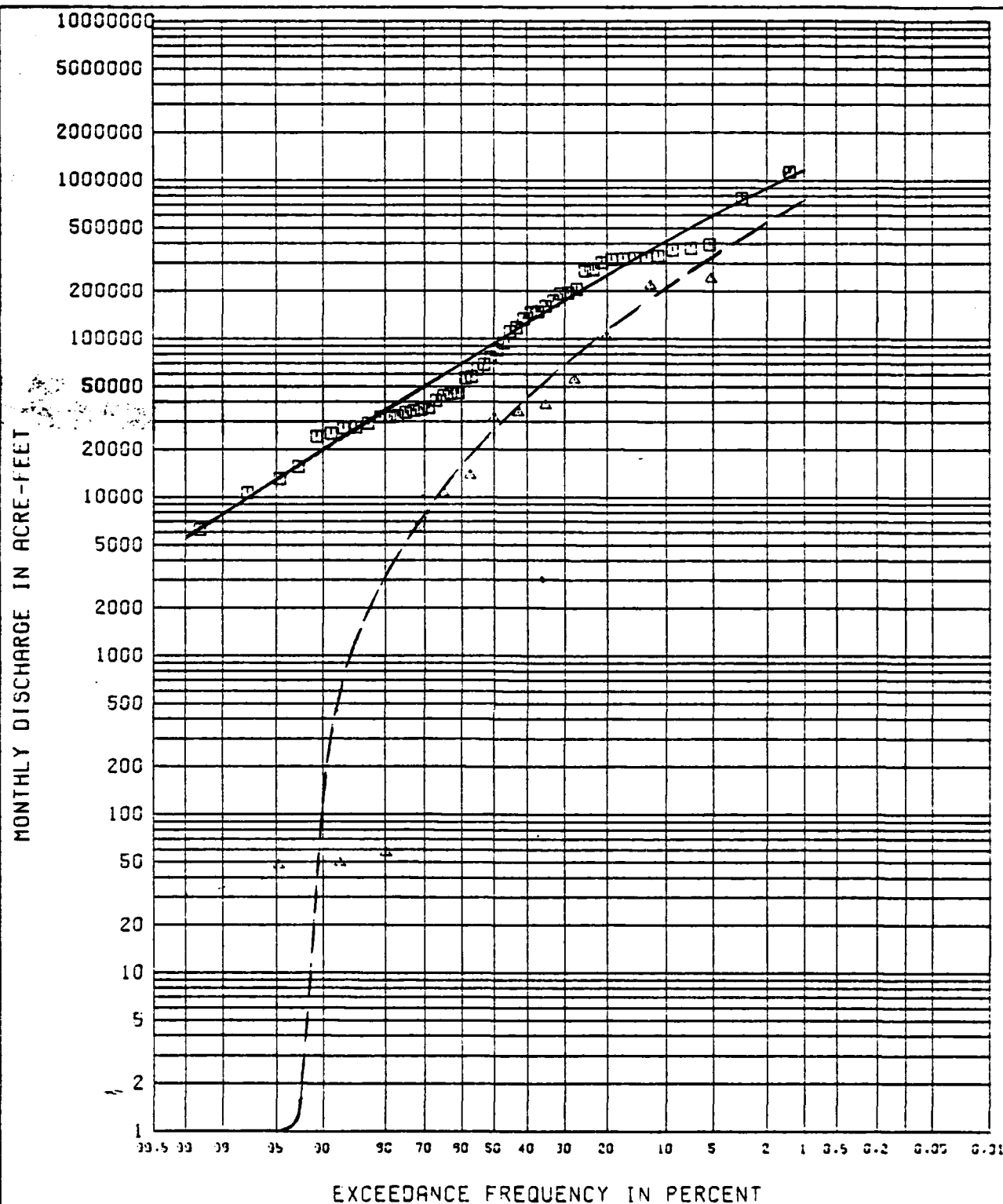
□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1909-1957)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1965-1979)

NECHES RIVER BASIN, TEXAS
SAM RAYBURN RESERVOIR
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
NOVEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE II



LEGEND

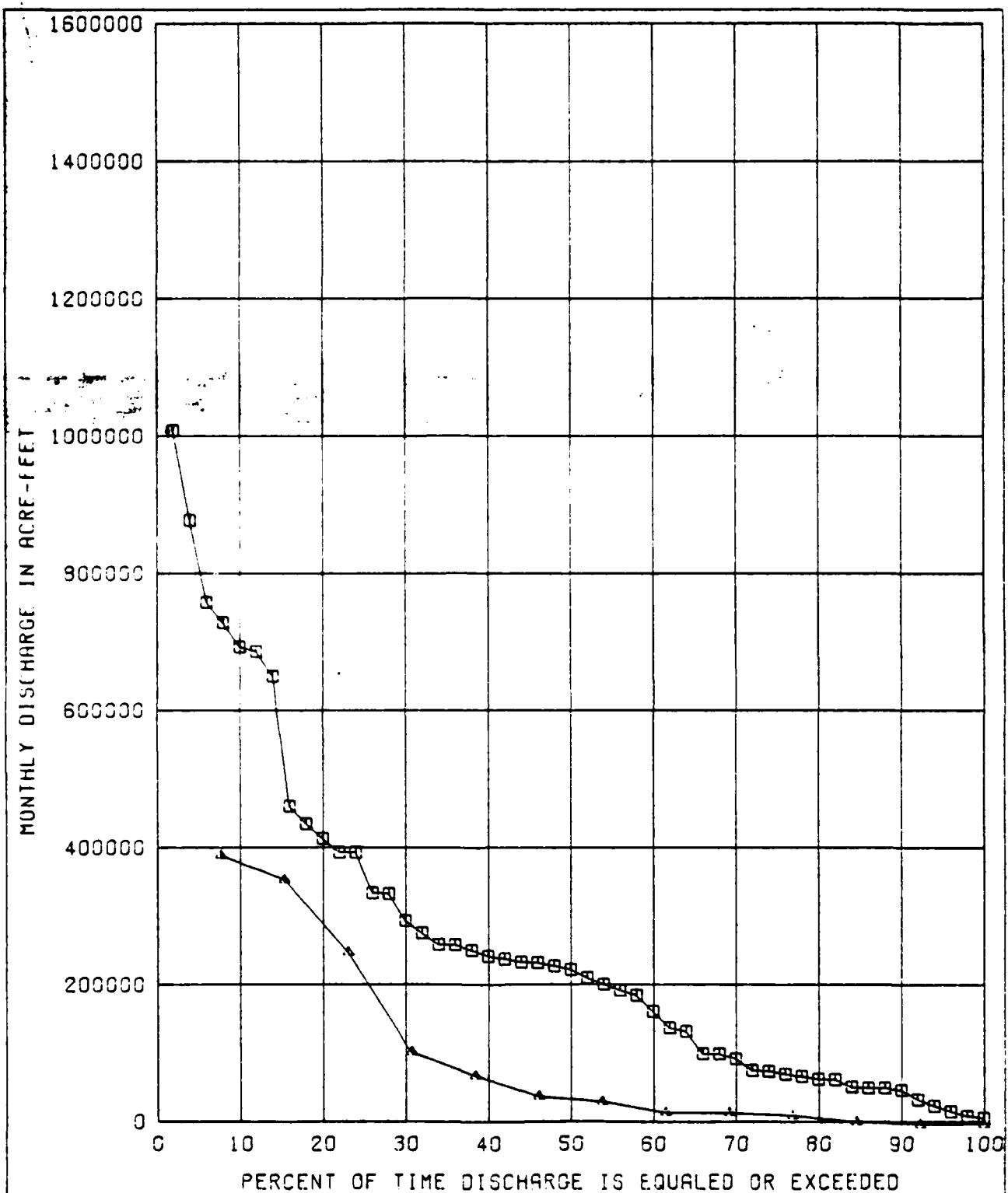
—■— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1909-1957)

—△— POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1965-1979)

NECHES RIVER BASIN, TEXAS
SAM RAYBURN RESERVOIR
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
DECEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 12



LEGEND

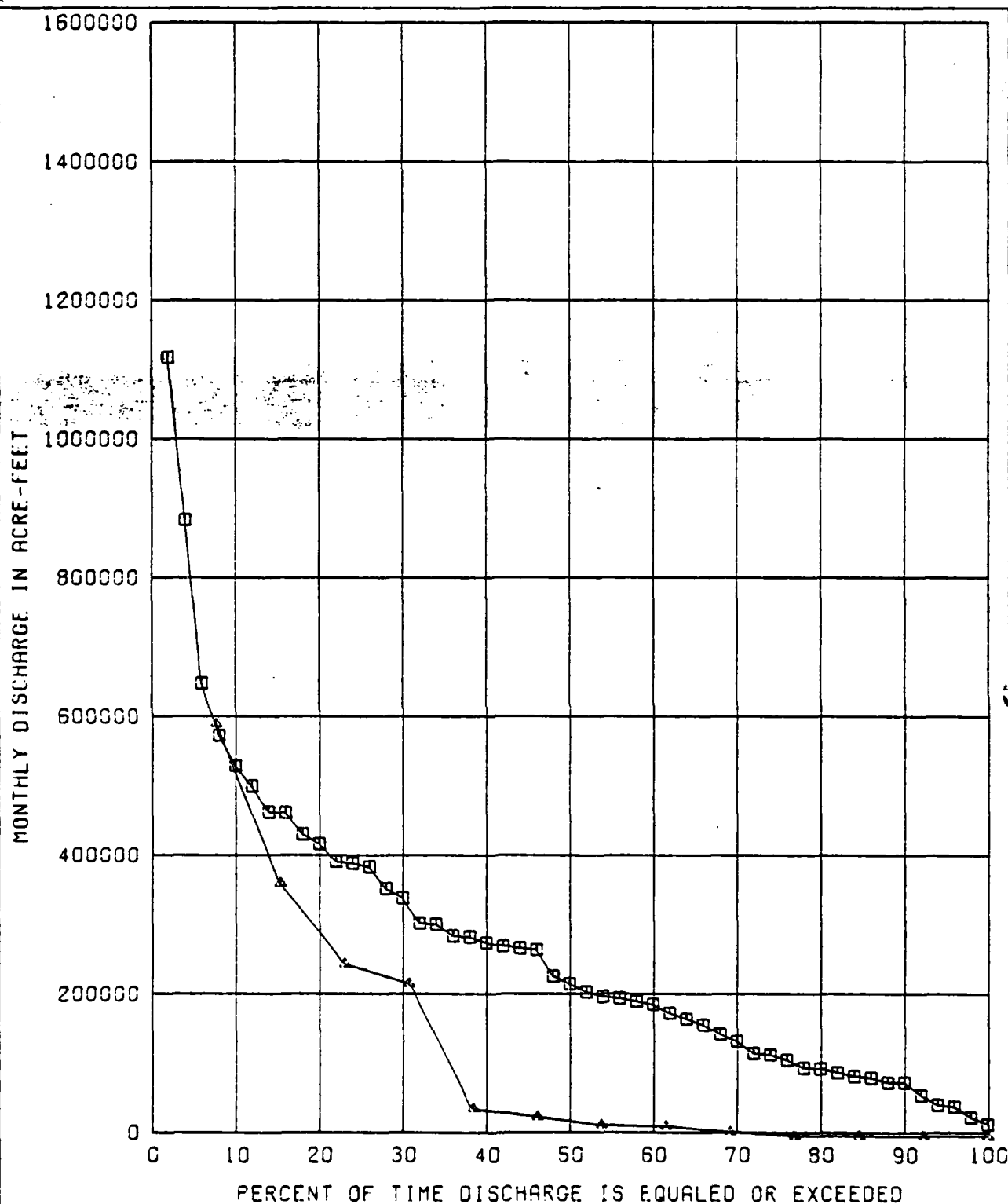
□ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1909-1957)

▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1965-1979)

NECHES RIVER BASIN, TEXAS
SAM RAYBURN RESERVOIR
FLOW DURATION CURVES AT DAM SITE
JANUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 13



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1909-1957)

▲ — ▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1965-1979)

NECHES RIVER BASIN, TEXAS

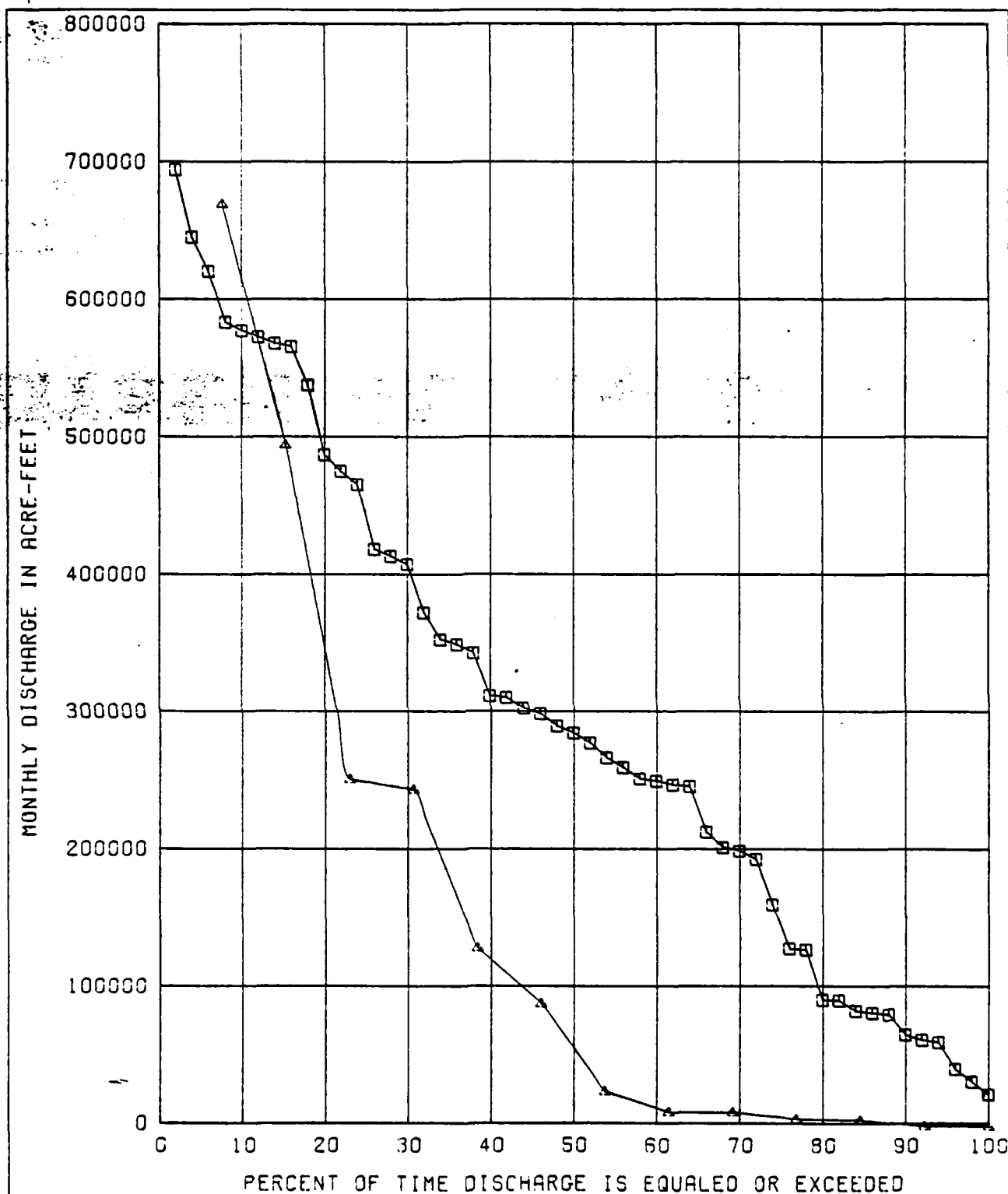
SAM RAYBURN RESERVOIR

FLOW DURATION CURVES AT DAM SITE

FEBRUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 14



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1909-1957)

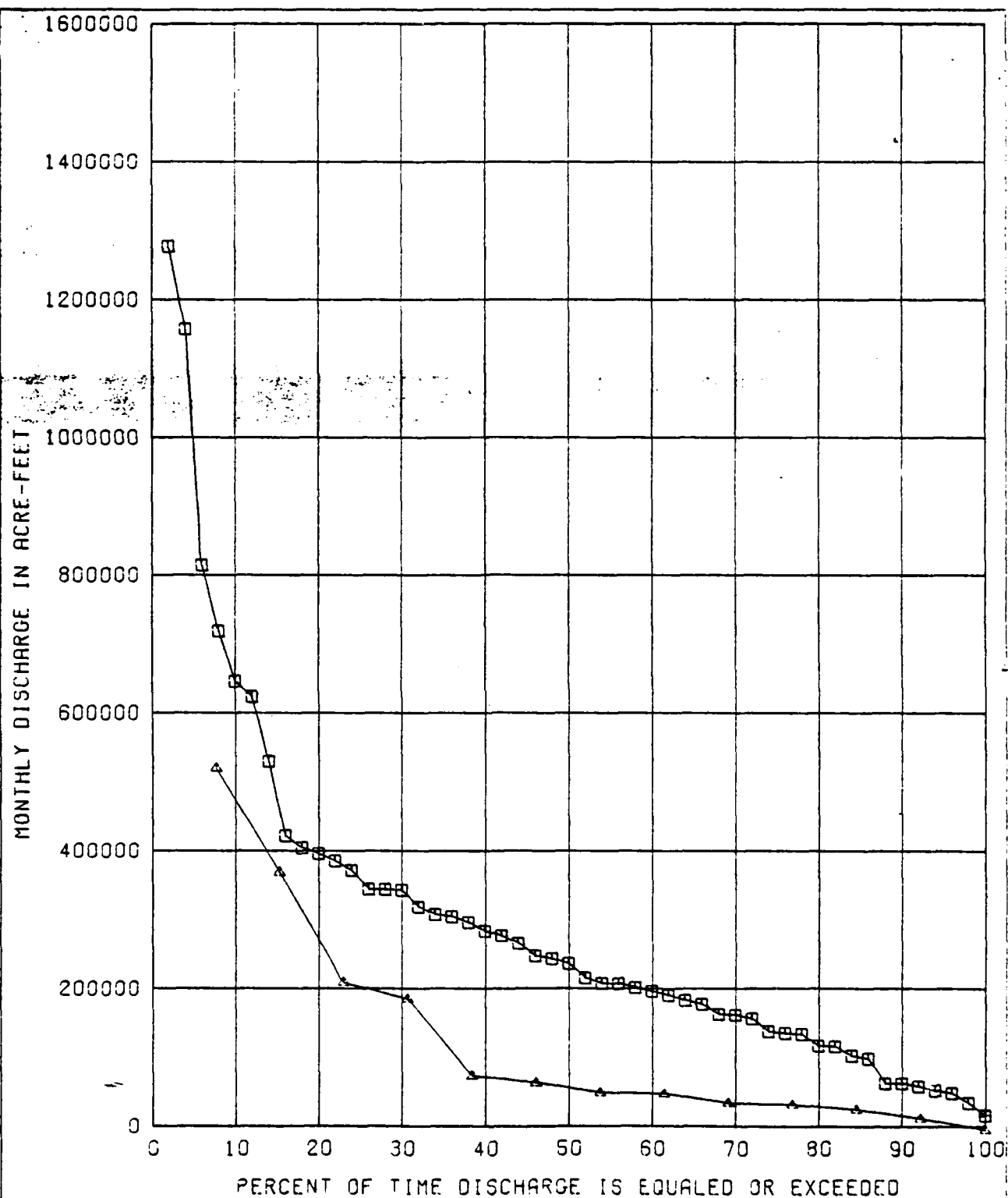
▲ — ▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1965-1979)

NECHES RIVER BASIN, TEXAS
SAM RAYBURN RESERVOIR

FLOW DURATION CURVES AT DAM SITE
MARCH FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 15



LEGEND

□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1909-1957)

▲ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1965-1979)

NECHES RIVER BASIN, TEXAS

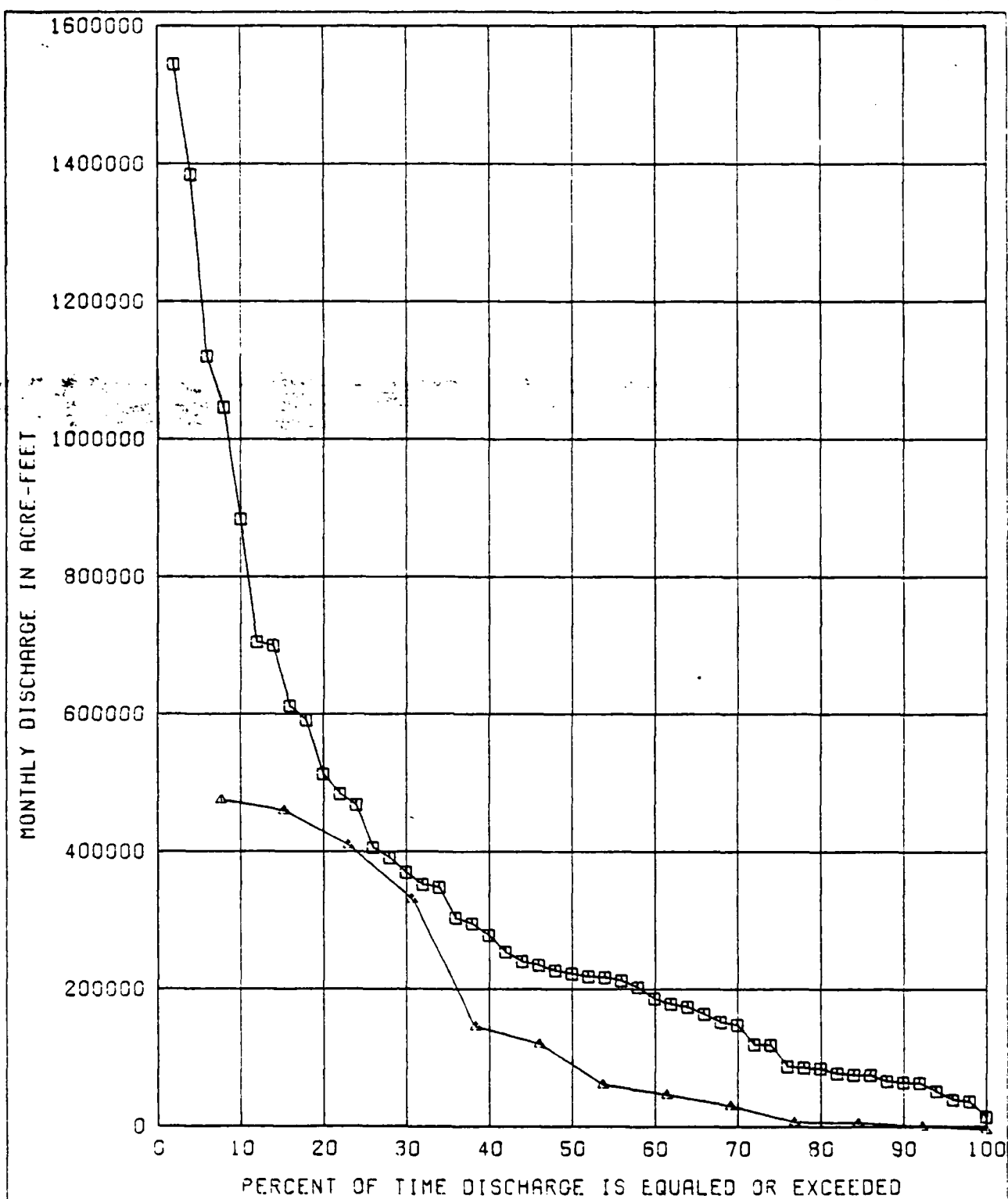
SAM RAYBURN RESERVOIR

FLOW DURATION CURVES AT DAM SITE

APRIL FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 16



LEGEND

□ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1903-1957)

△ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1965-1979)

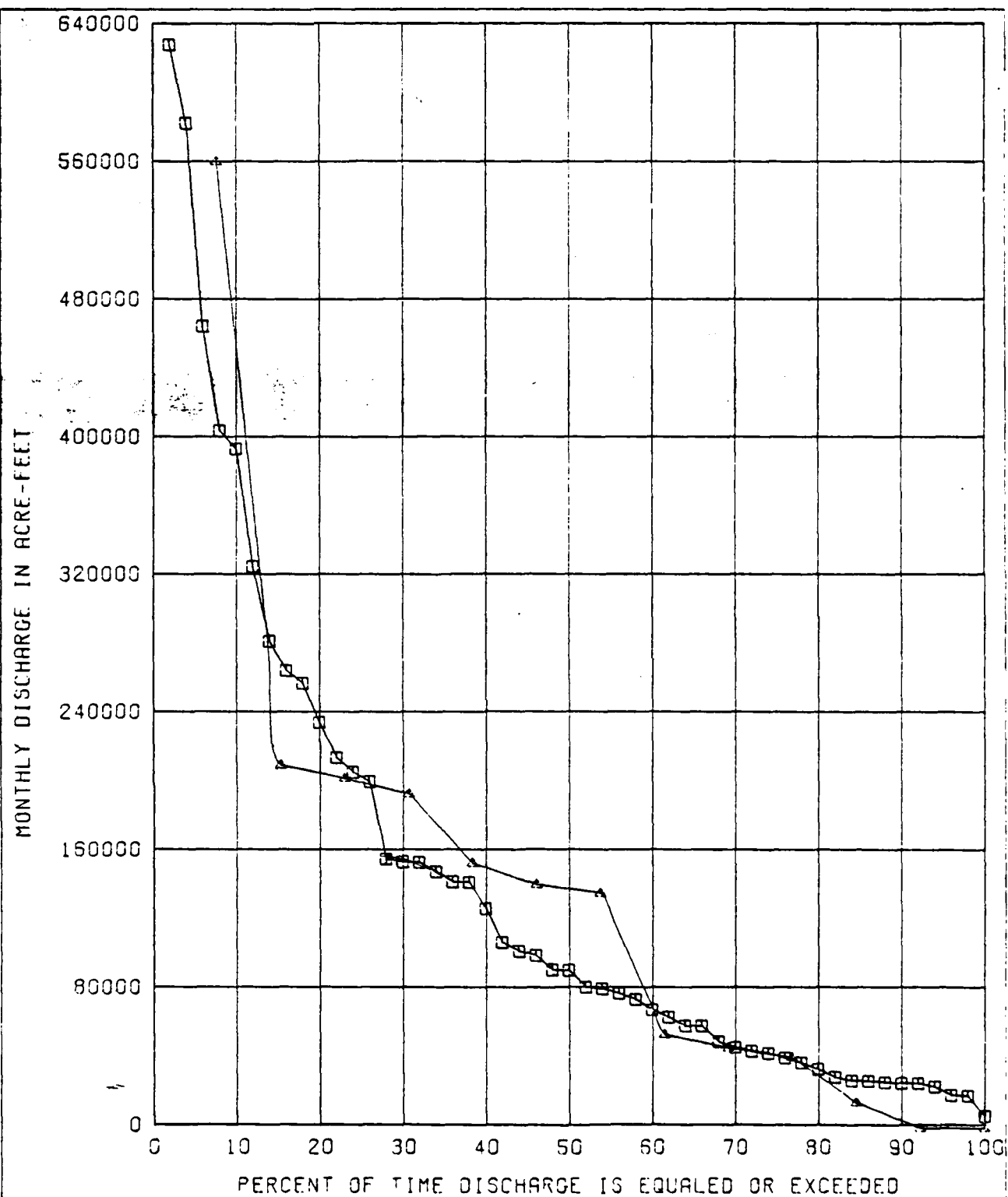
NECHES RIVER BASIN, TEXAS

SAM RAYBURN RESERVOIR

FLOW DURATION CURVES AT DAM SITE
MAY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 17



LEGEND

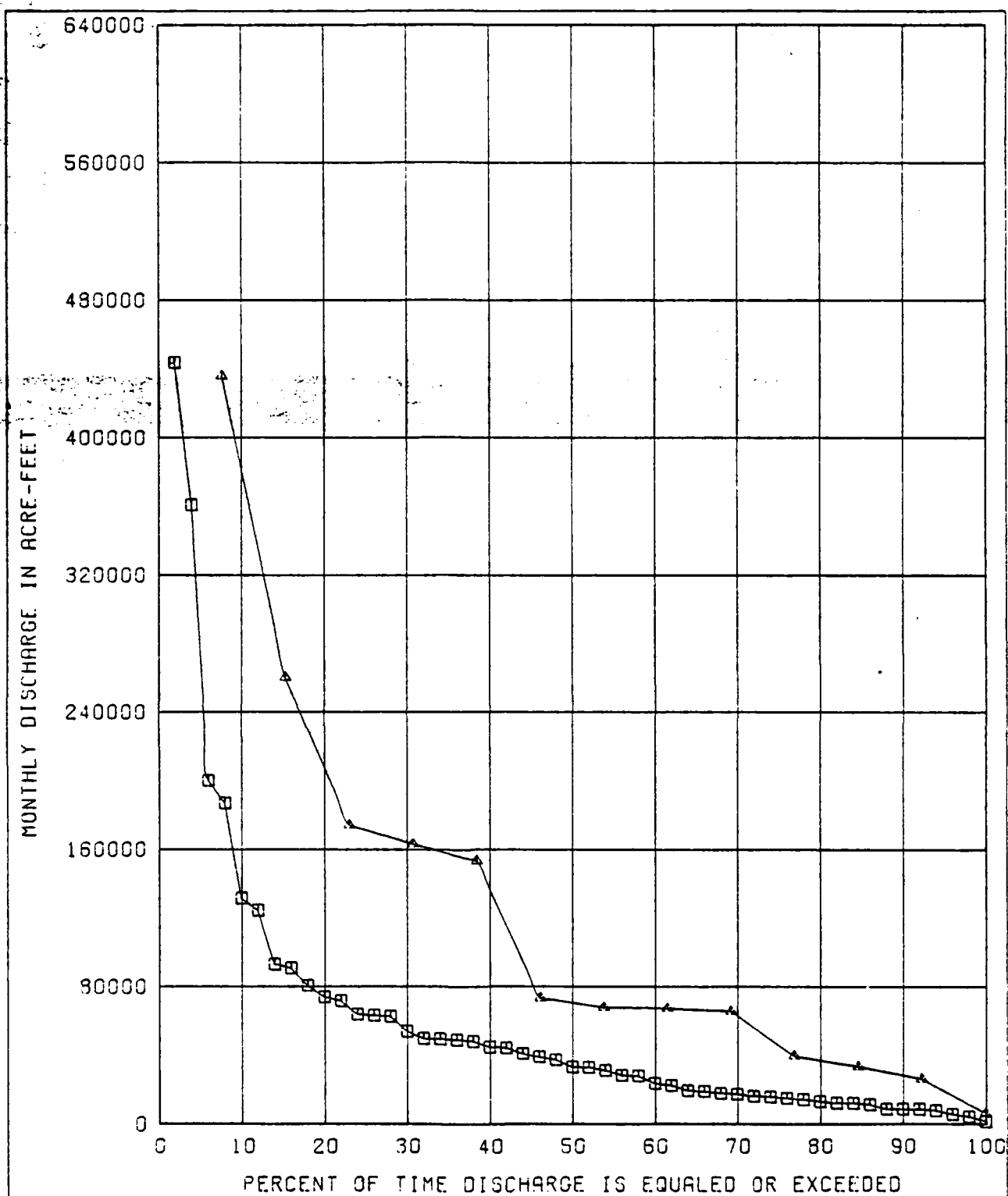
□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1909-1957)

▲ — ▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1965-1979)

NECHES RIVER BASIN, TEXAS
SAM RAYBURN RESERVOIR
FLOW DURATION CURVES AT DAM SITE
JUNE FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 18



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1903-1957)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1965-1979)

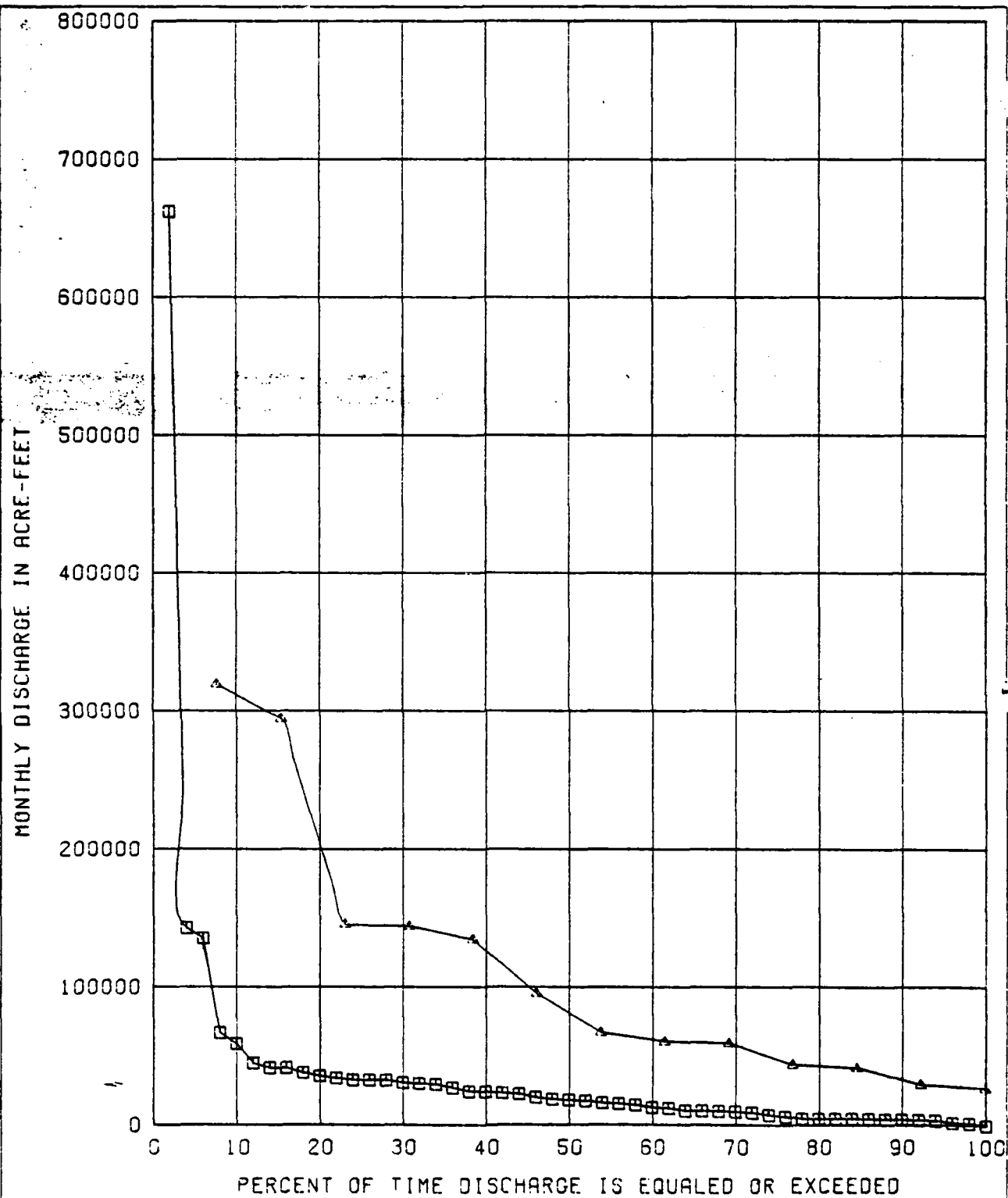
NECHES RIVER BASIN, TEXAS

SAM RAYBURN RESERVOIR

FLOW DURATION CURVES AT DAM SITE
JULY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 19



LEGEND

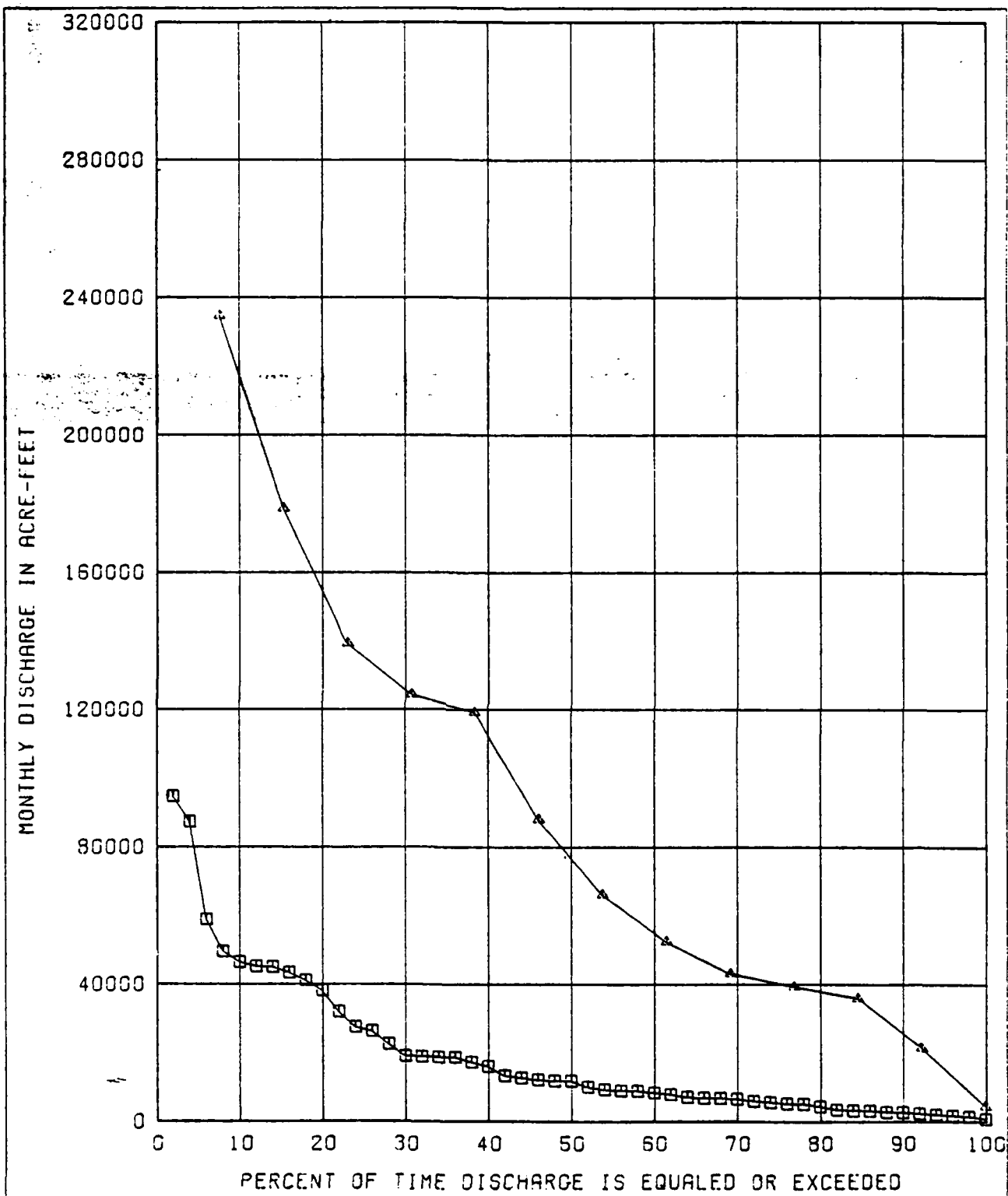
□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1909-1957)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1965-1979)

NECHES RIVER BASIN, TEXAS
SAM RAYBURN RESERVOIR
FLOW DURATION CURVES AT DAM SITE
AUGUST FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 20



LEGEND

□ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1909-1957)

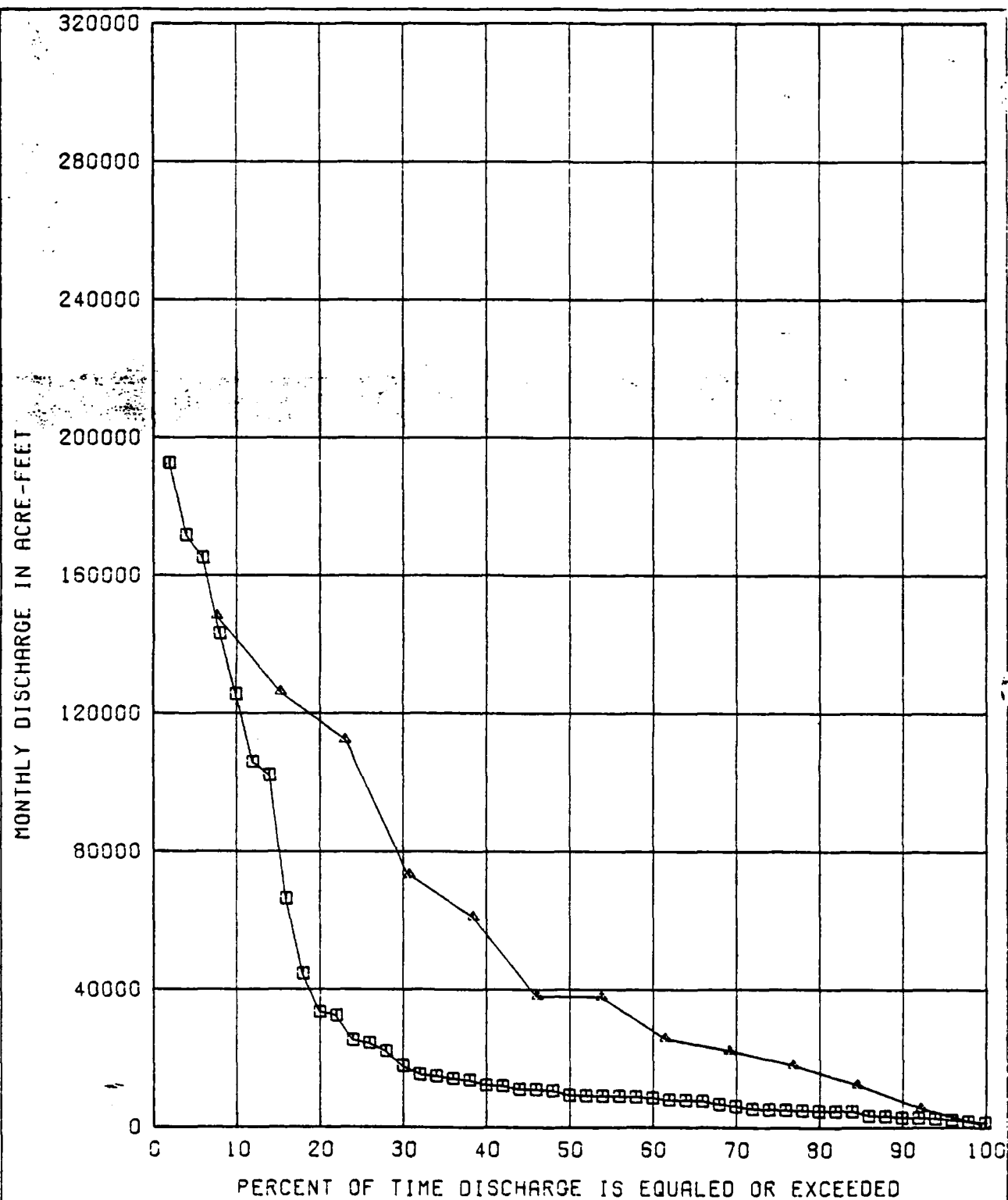
▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1965-1979)

NECHES RIVER BASIN, TEXAS
SAM RAYBURN RESERVOIR

FLOW DURATION CURVES AT DAM SITE
SEPTEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 21



LEGEND

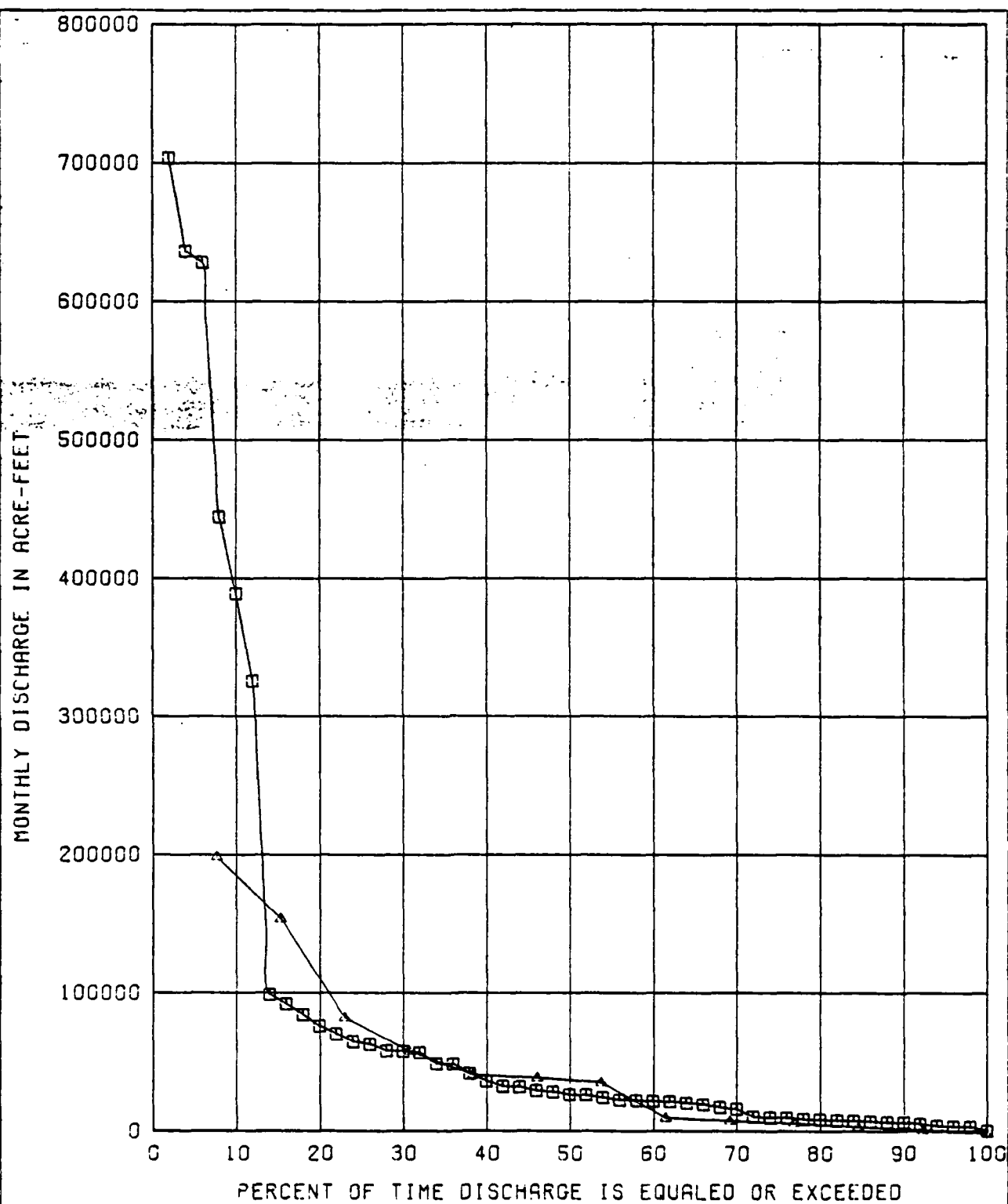
□ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1909-1957)

▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1965-1979)

NECHES RIVER BASIN, TEXAS
SAM RAYBURN RESERVOIR
FLOW DURATION CURVES AT DAM SITE
OCTOBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 22



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1908-1957)

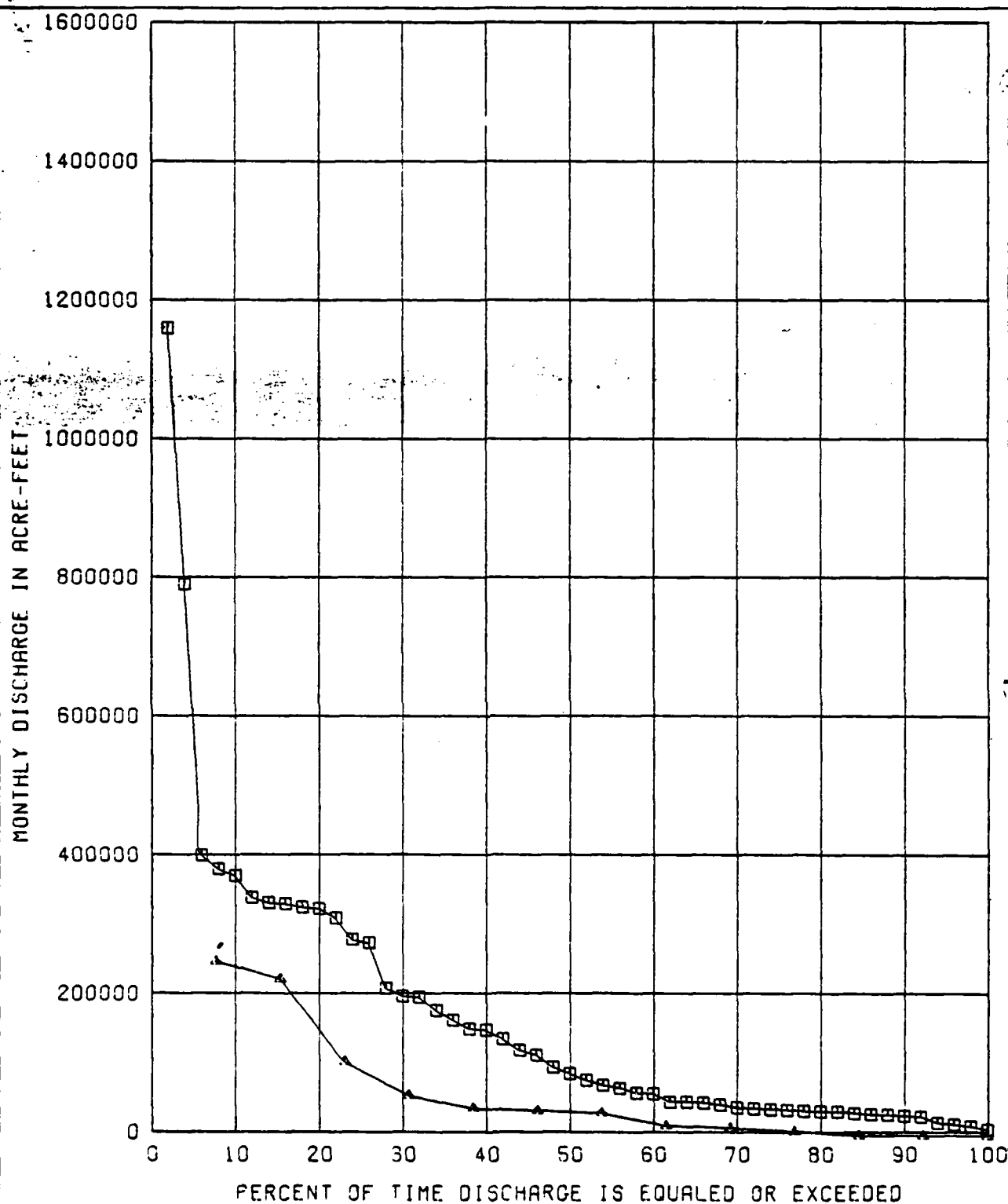
▲ — ▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1955-1979)

NECHES RIVER BASIN, TEXAS
SAM RAYBURN RESERVOIR

FLOW DURATION CURVES AT DAM SITE
NOVEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 23



LEGEND

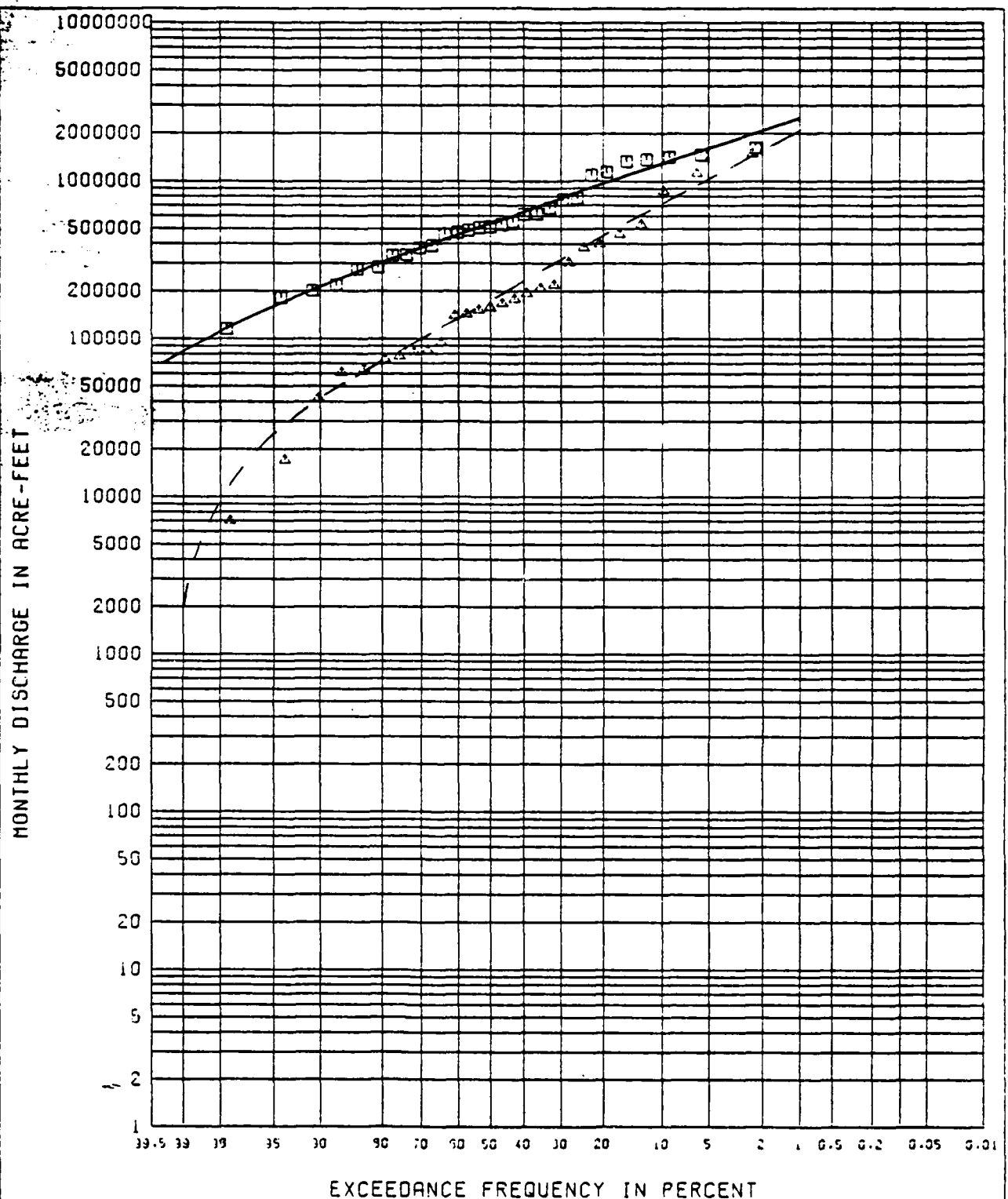
- PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1909-1957)
- ▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1955-1979)

NECHES RIVER BASIN, TEXAS
SAM RAYBURN RESERVOIR

FLOW DURATION CURVES AT DAM SITE
DECEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 24



LEGEND

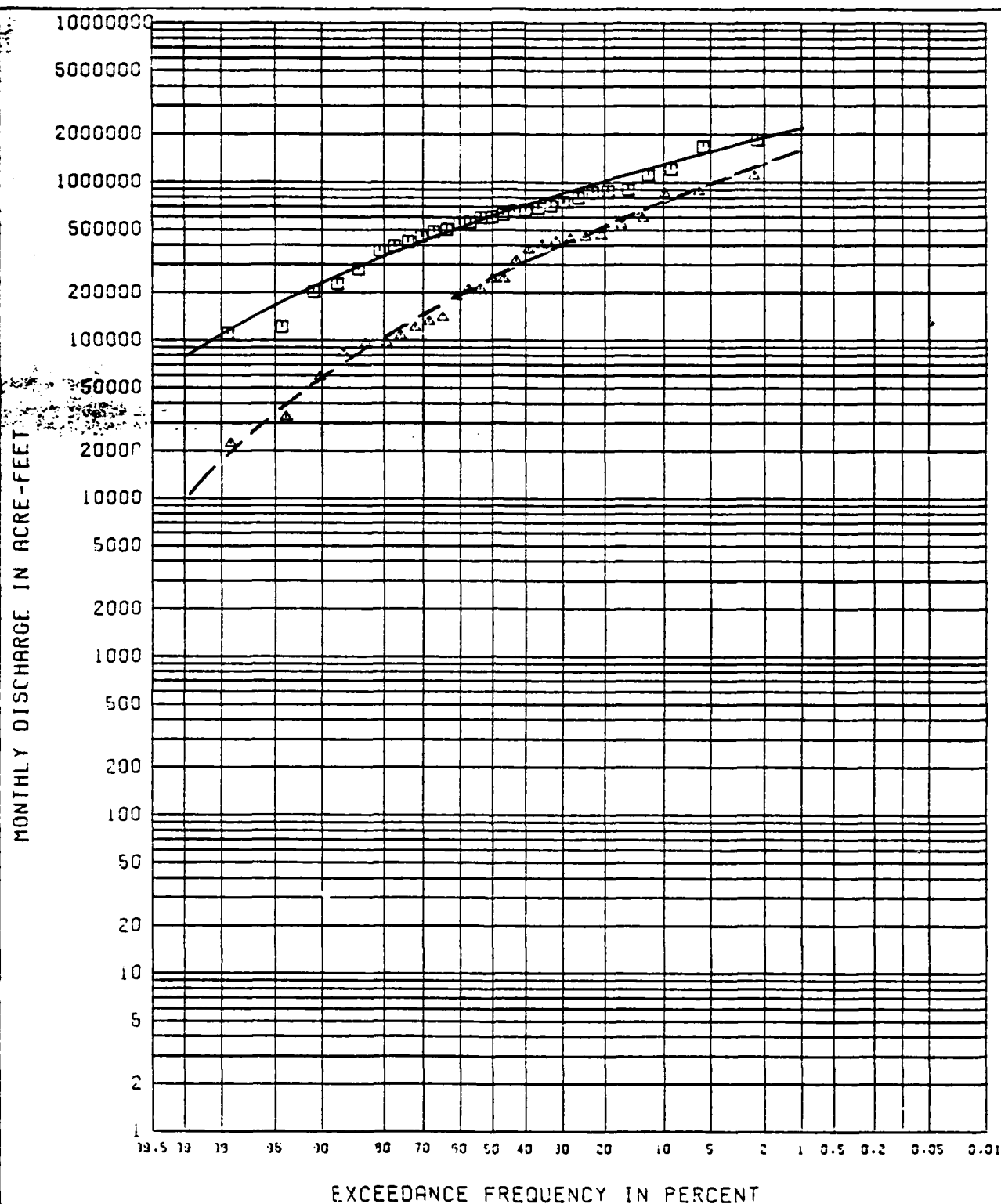
— □ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1921-1950)

- - △ - - POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

NECHES RIVER BASIN, TEXAS
B.A. STEINHAGEN LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
JANUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE I



LEGEND

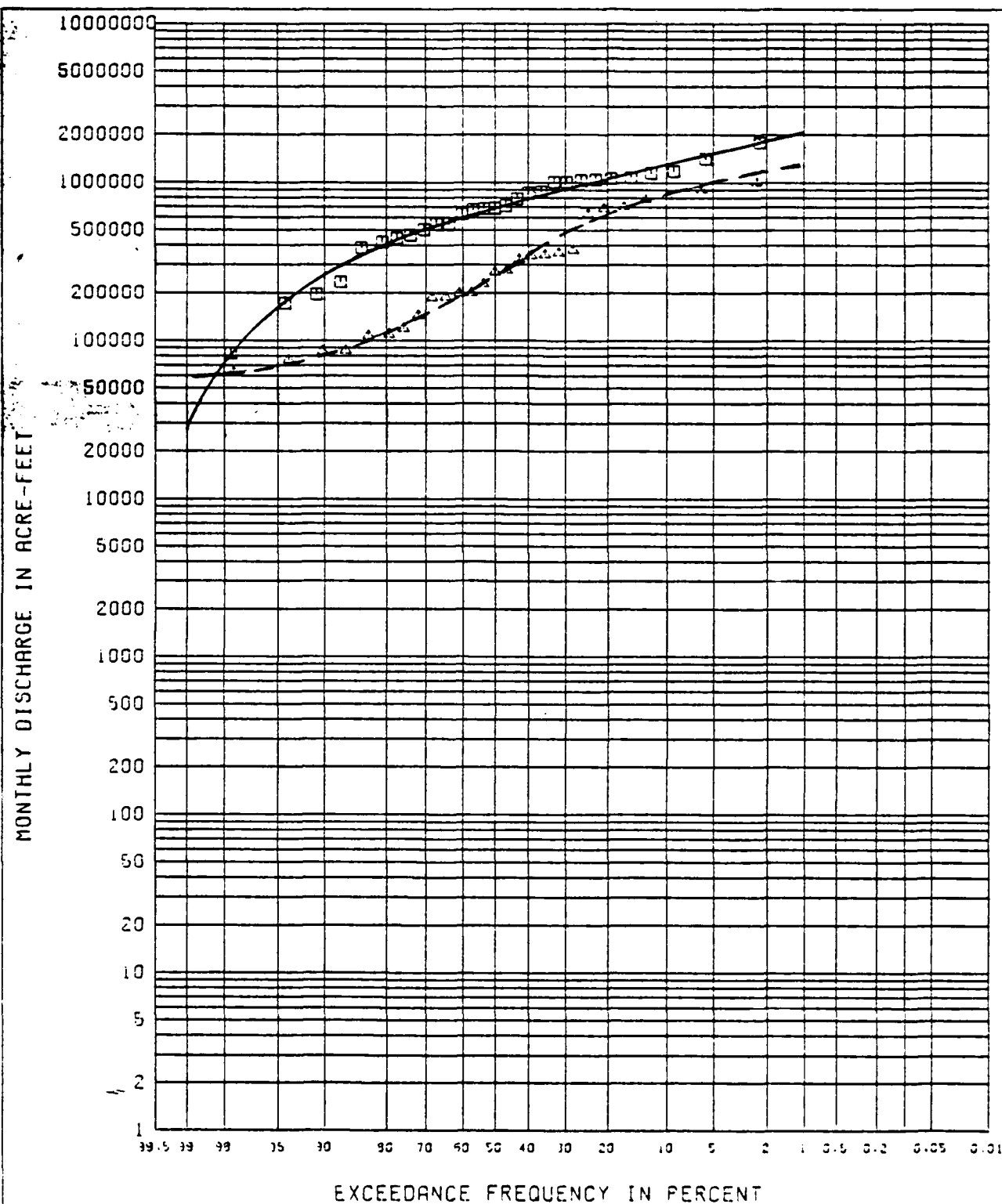
□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1921-1950)

▲ — ▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1978)

NECHES RIVER BASIN, TEXAS
B.A. STEINHAGEN LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
FEBRUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 2



LEGEND

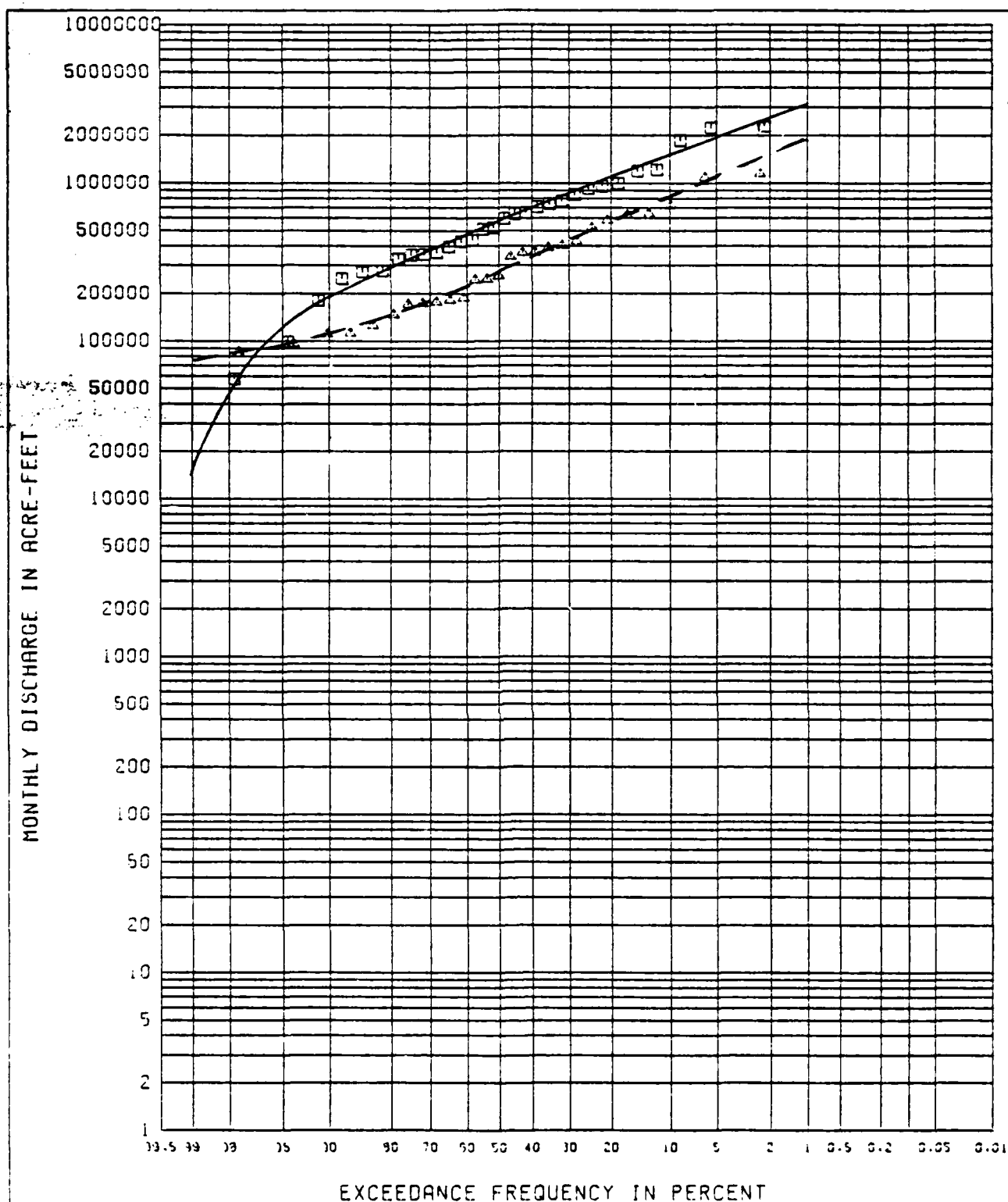
□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1921-1950)

▲ — ▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

NECHES RIVER BASIN, TEXAS
B.A. STEINHAGEN LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
MARCH FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 3



LEGEND

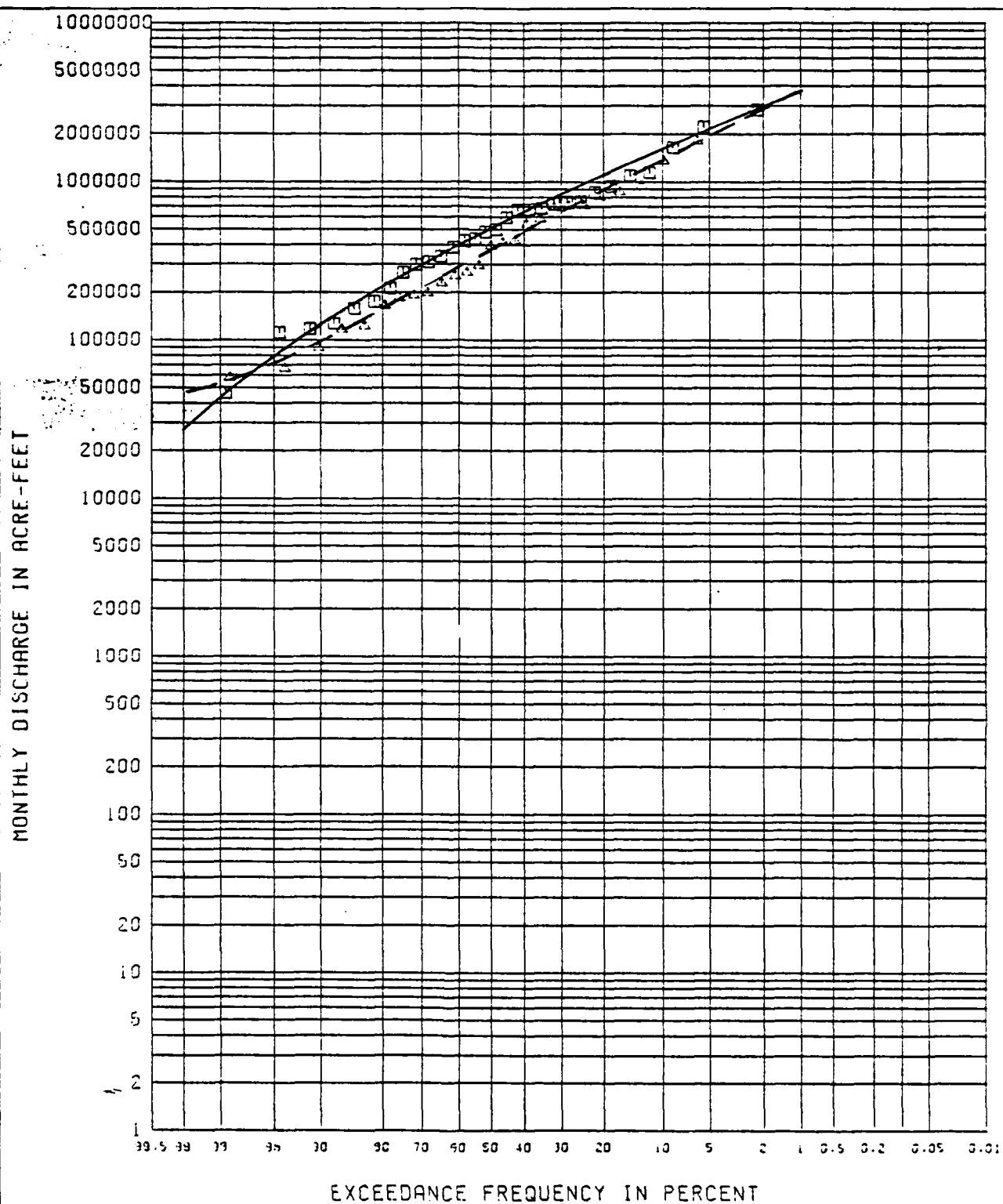
— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1921-1950)

— POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

NECHES RIVER BASIN, TEXAS
B.A. STEINHAGEN LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
APRIL FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 4



LEGEND

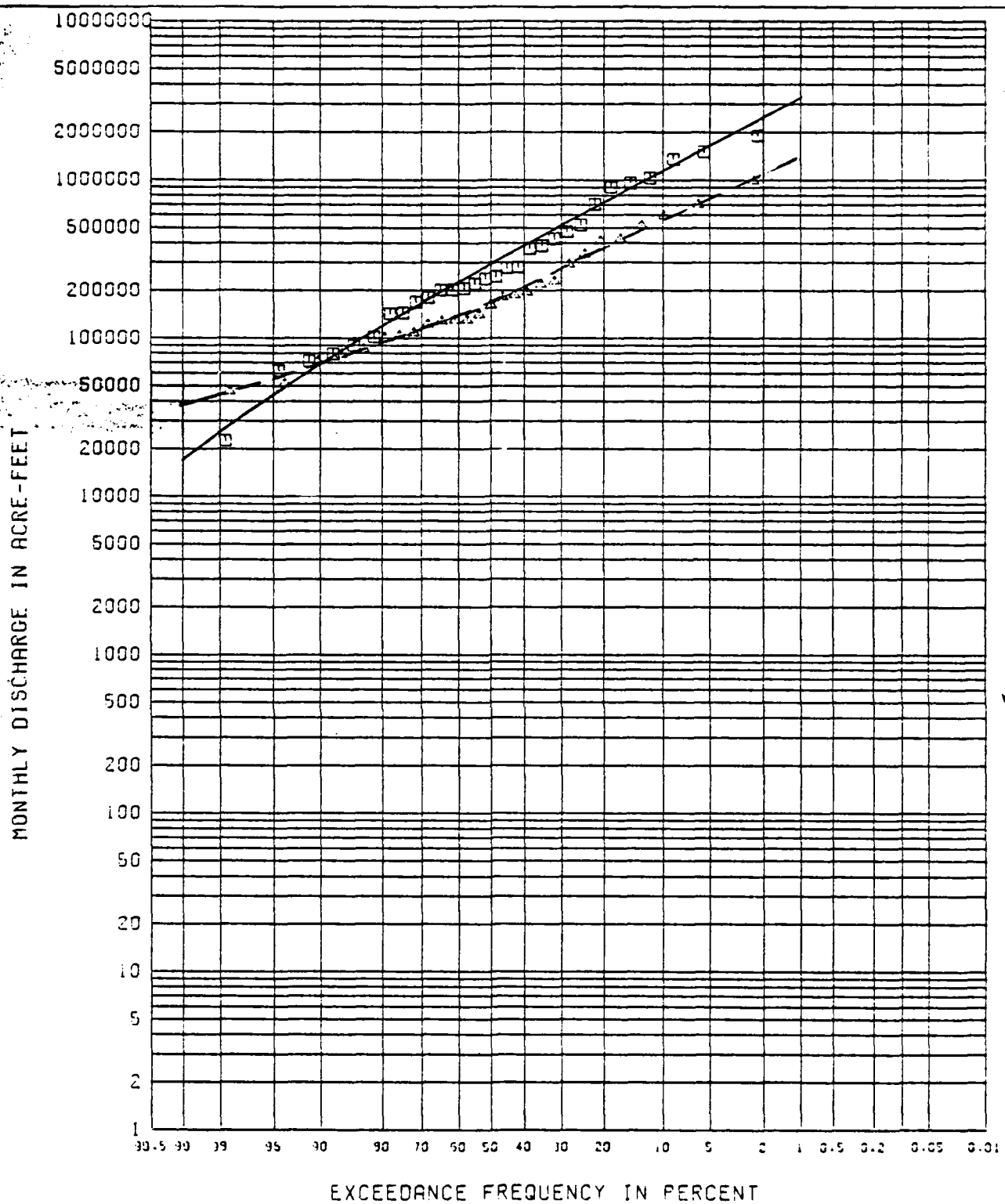
□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1921-1950)

▲ — ▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1978)

NECHES RIVER BASIN, TEXAS
B.A. STEINHAGEN LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
MAY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 5



LEGEND

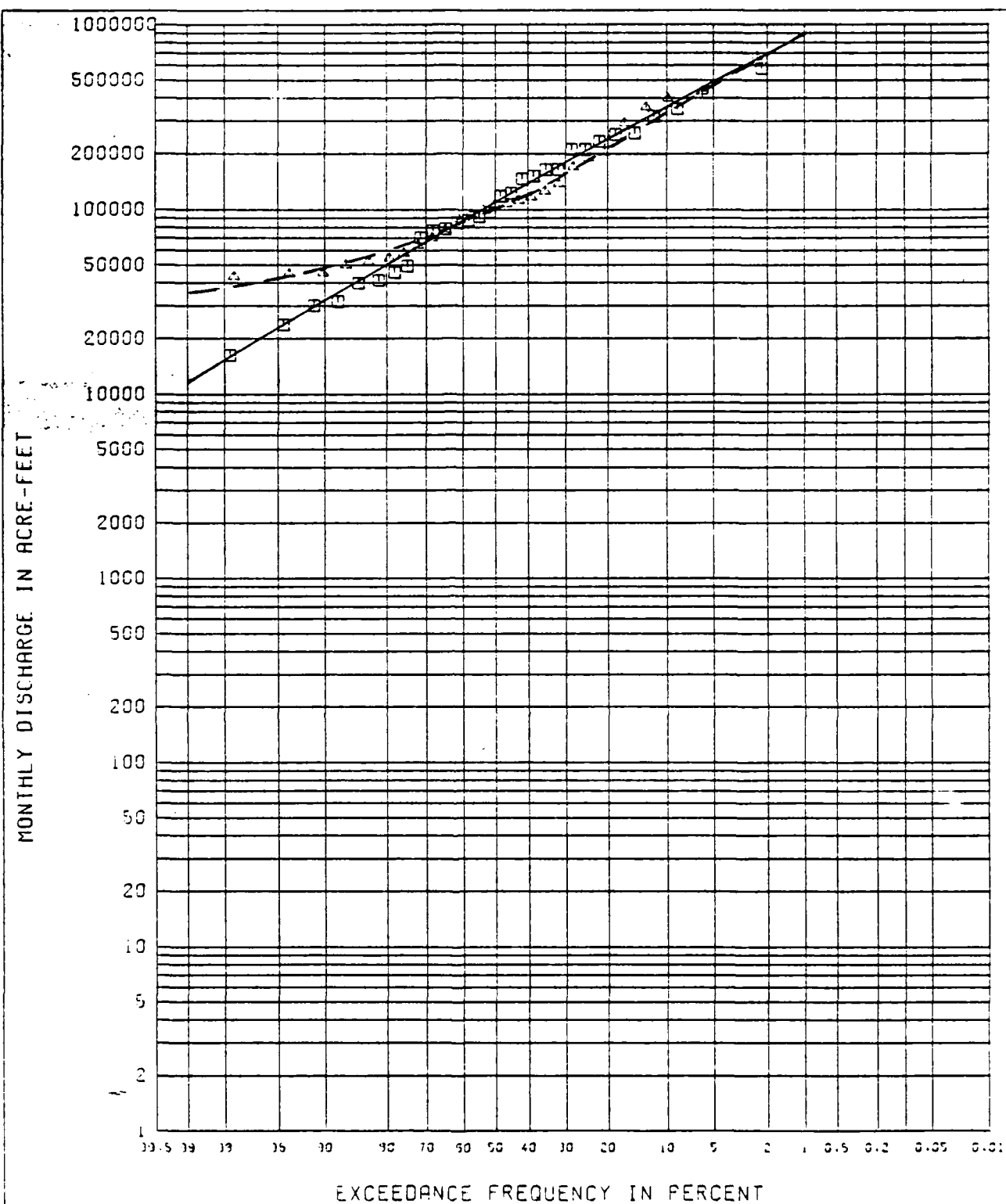
—○— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1921-1950)

—△— POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

NECHES RIVER BASIN, TEXAS
B.A. STEINHAGEN LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
JUNE FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 6



LEGEND

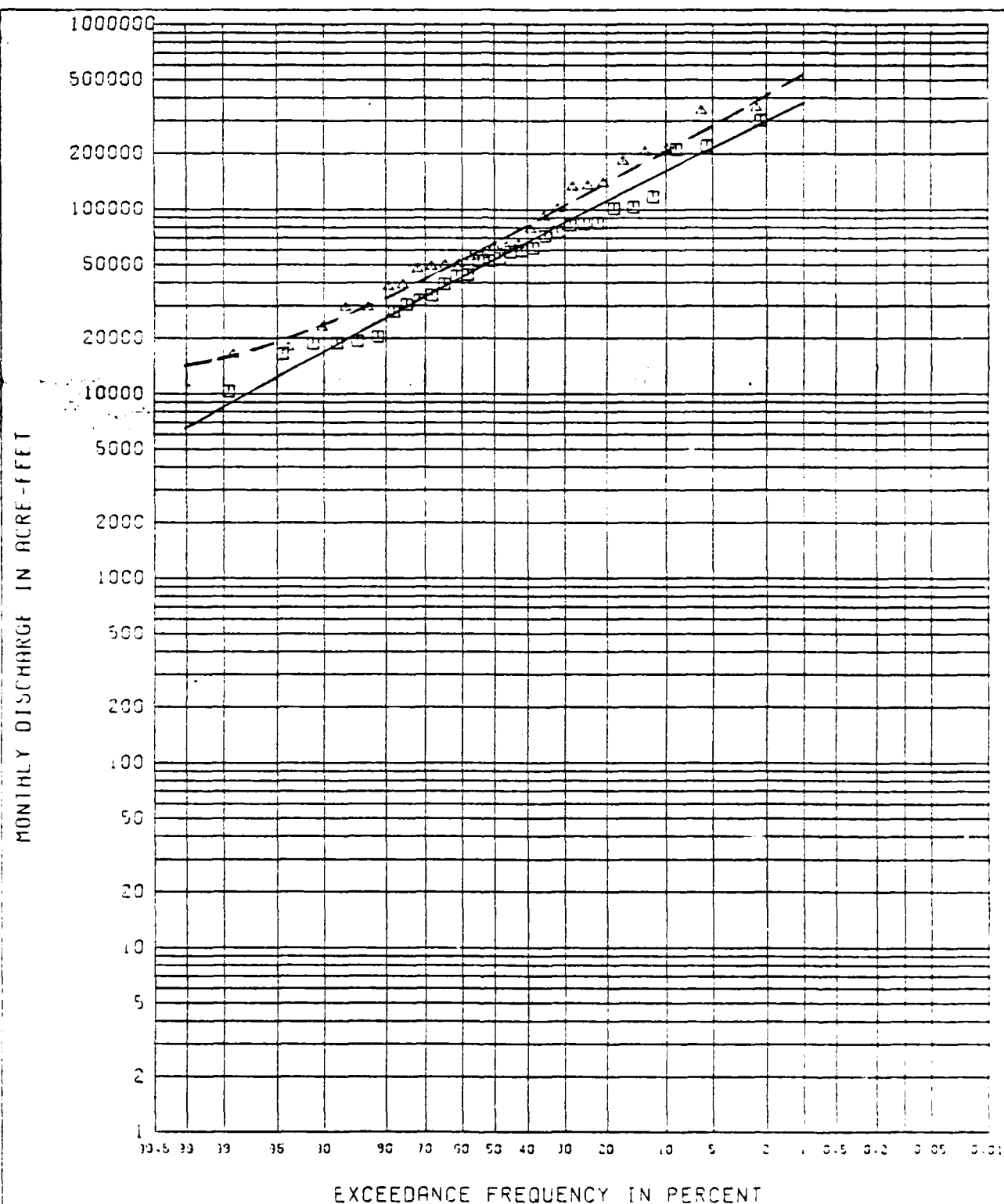
□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1921-1950)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

NECHES RIVER BASIN, TEXAS
B.A. STEINHAGEN LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
JULY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980.

PLATE 7



LEGEND

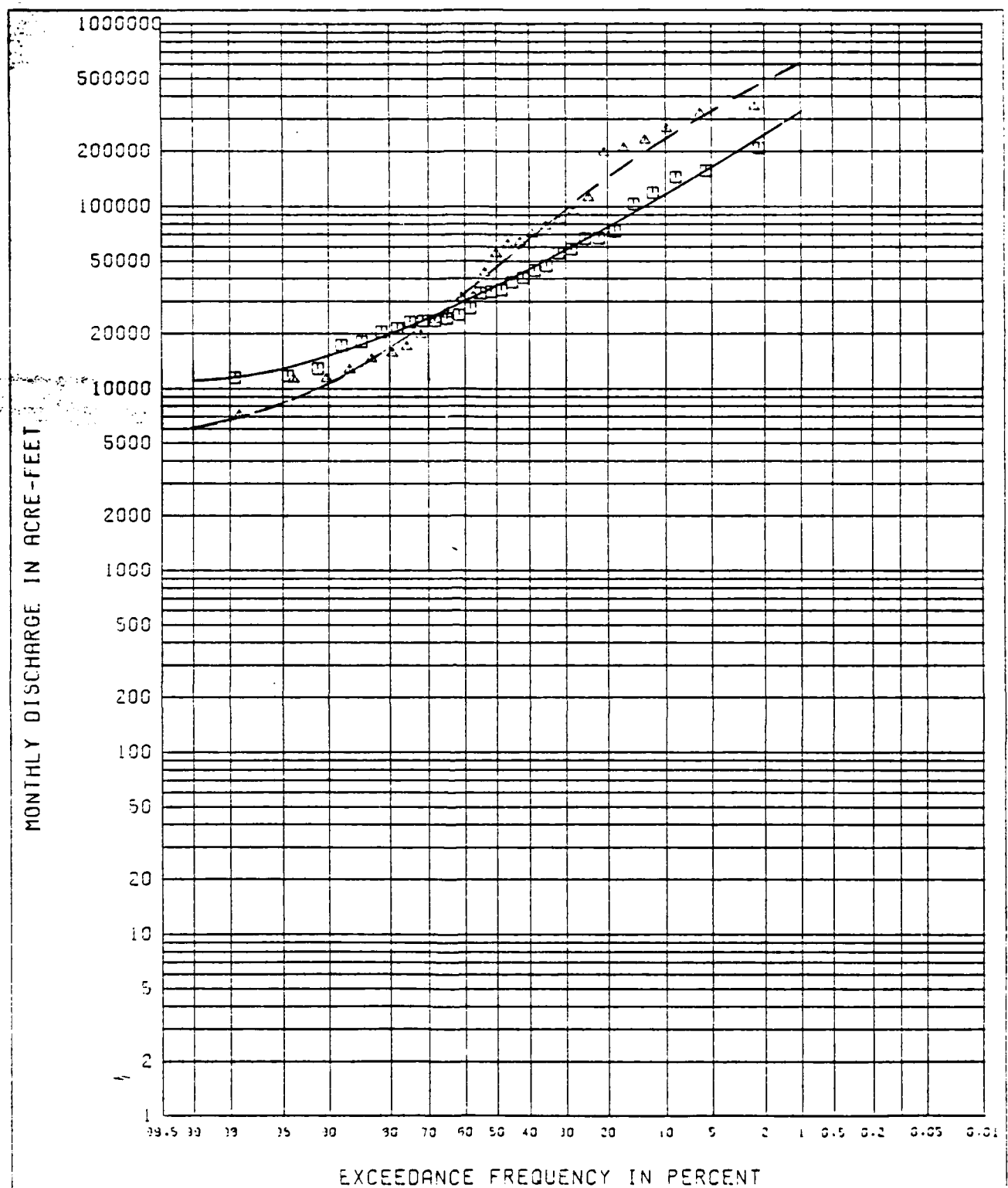
— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1921-1950)

— POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

NECHES RIVER BASIN, TEXAS
B.A. STEINHAGEN LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
AUGUST FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 8

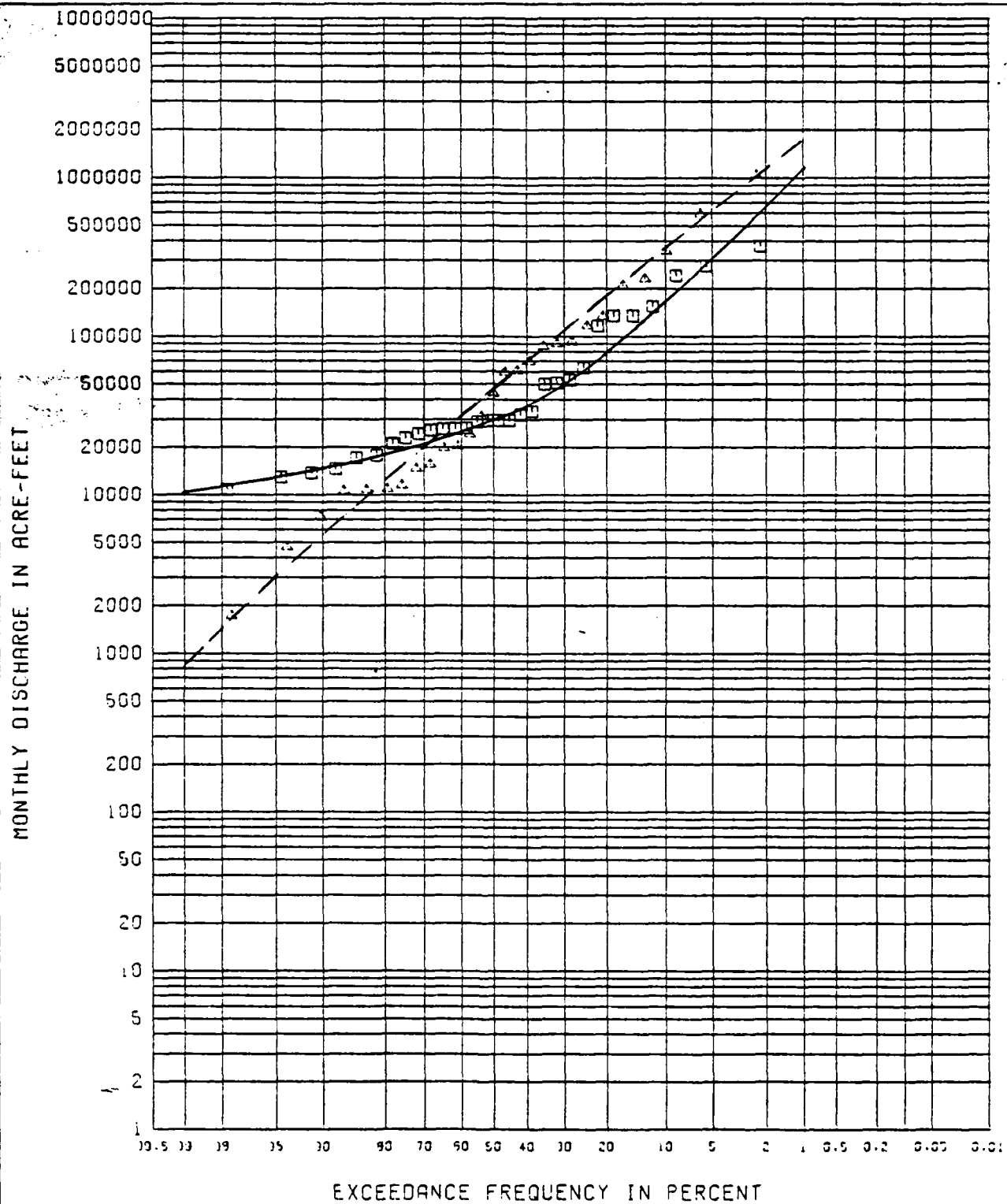


LEGEND

- — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1921-1950)
- △ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

NECHES RIVER BASIN, TEXAS
B.A. STEINHAGEN LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
SEPTEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980



LEGEND

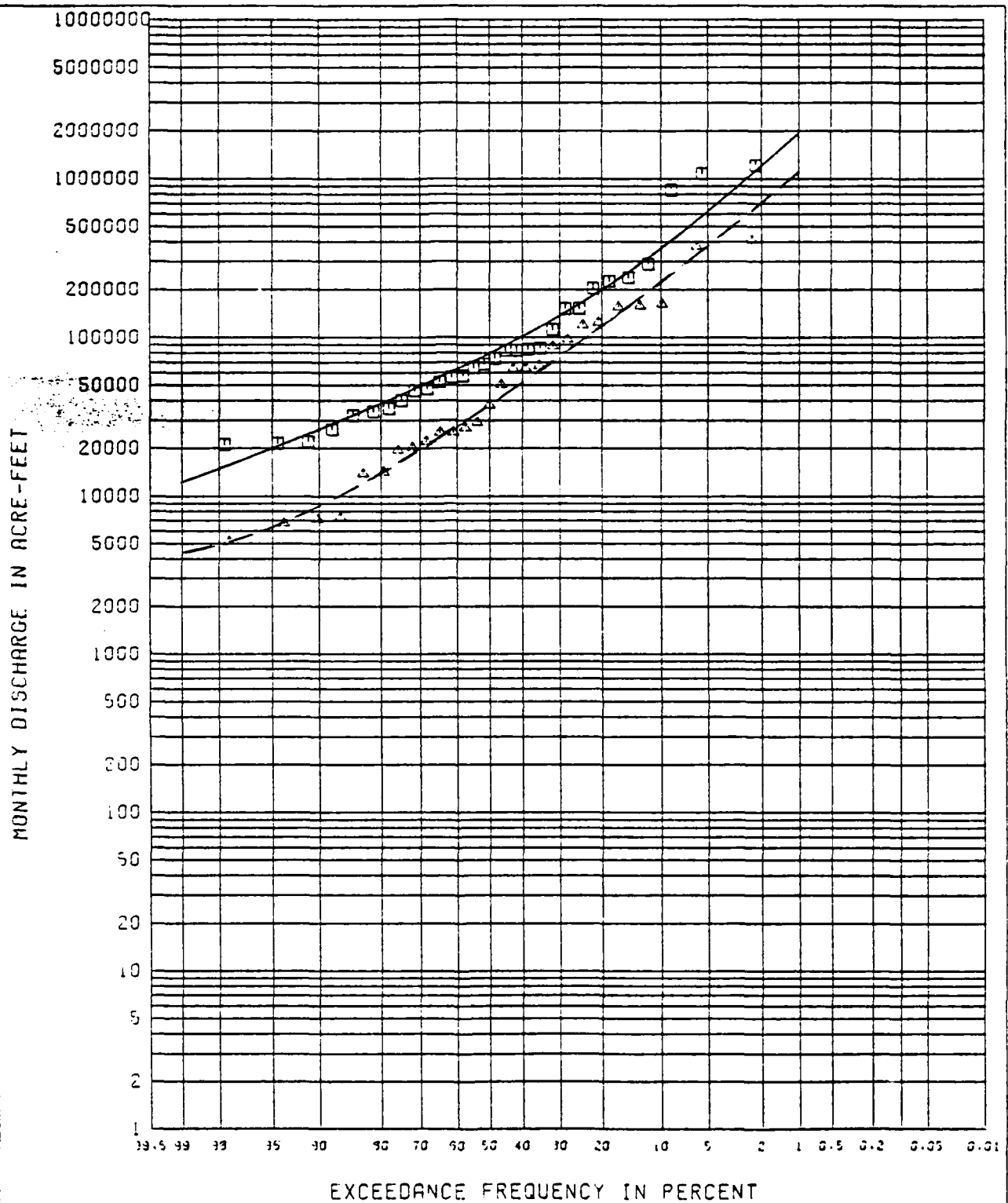
— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1921-1950)

— POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

NECHES RIVER BASIN, TEXAS
B.A. STEINHAGEN LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
OCTOBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 10



LEGEND

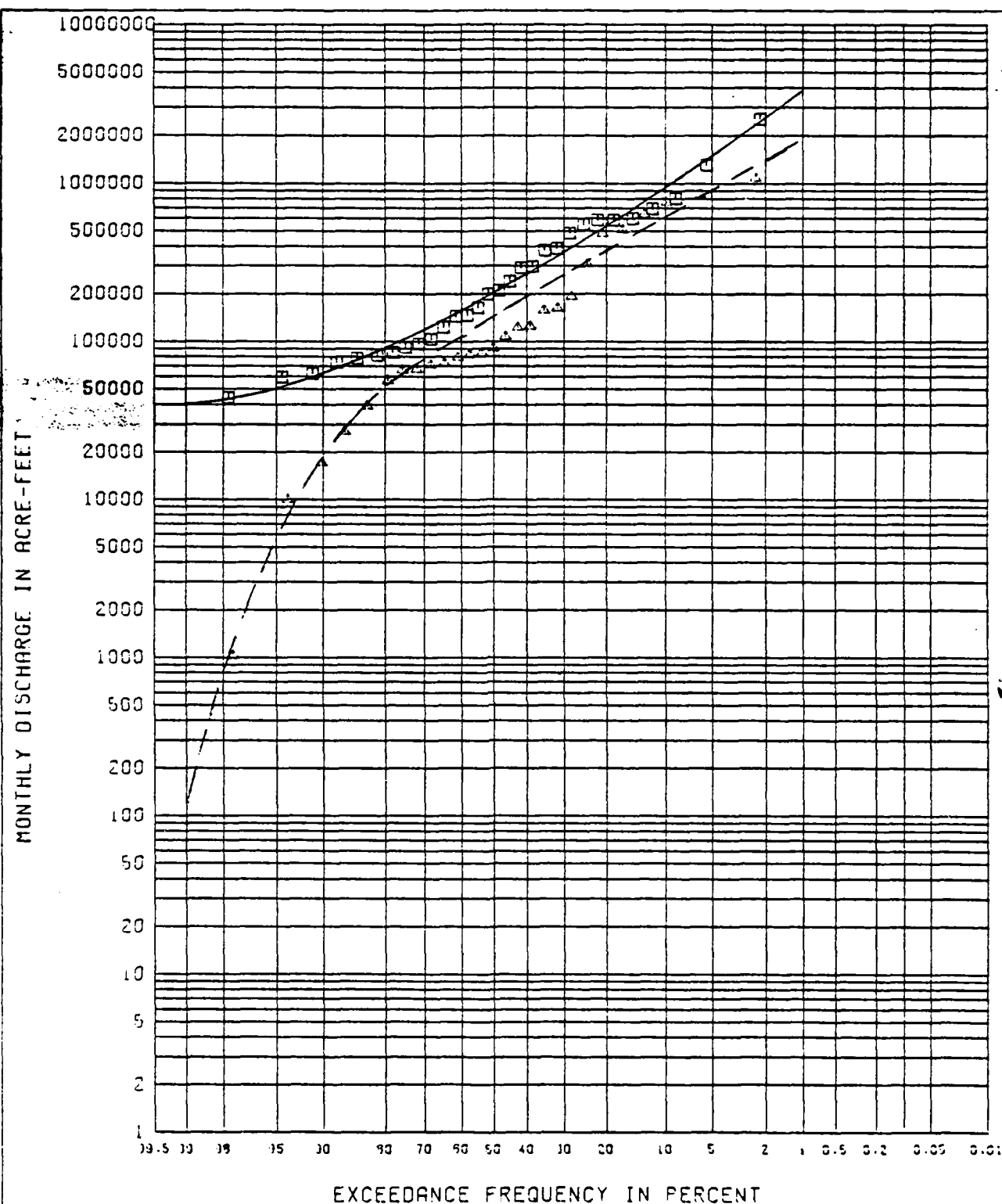
— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1921-1950)

— POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1978)

NECHES RIVER BASIN, TEXAS
B.A. STEINHAGEN LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
NOVEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE II



LEGEND

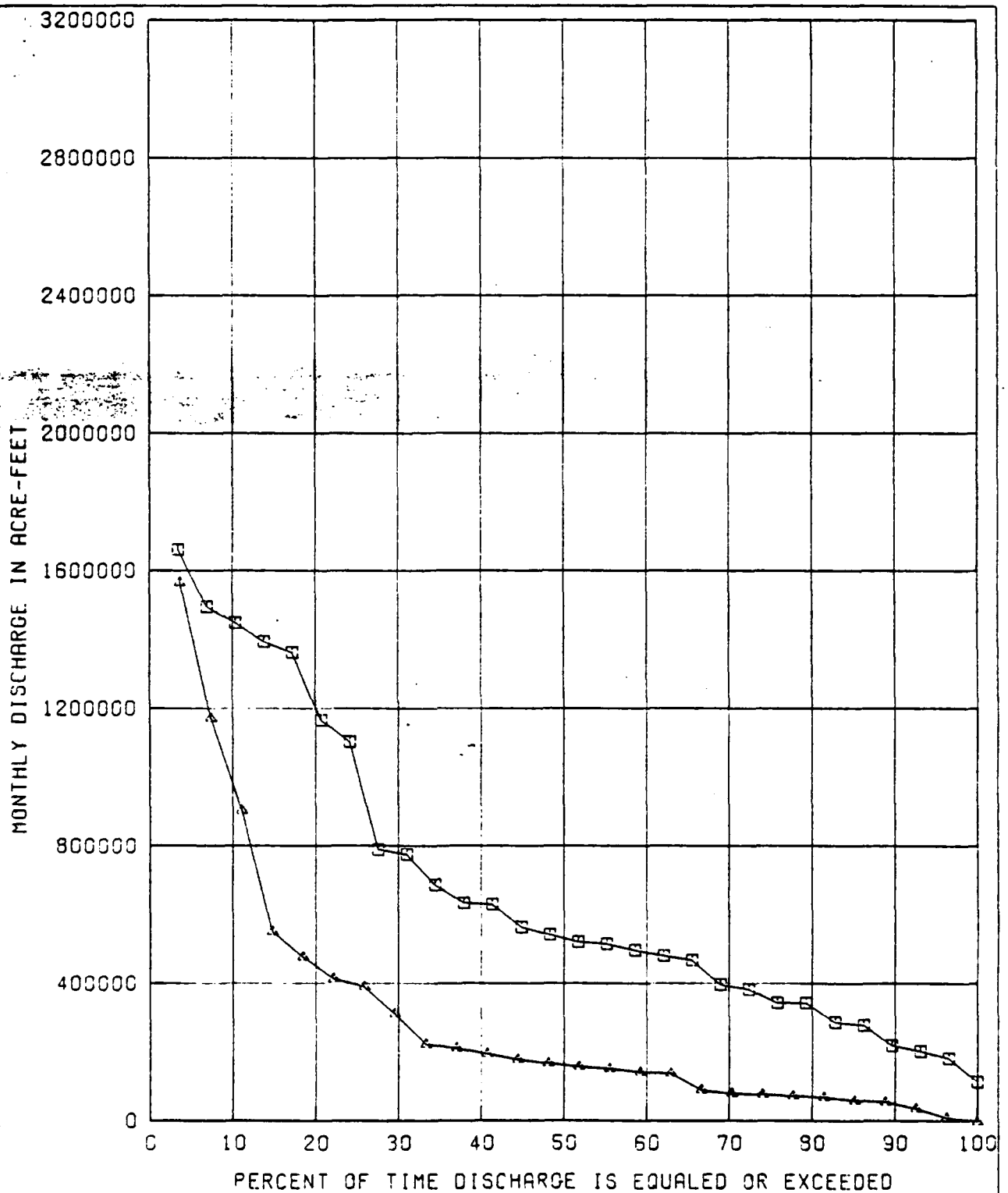
—■— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1921-1950)

-▲- POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

NECHES RIVER BASIN, TEXAS
B.A. STEINHAGEN LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
DECEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 12



LEGEND

□ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1921-1950)

△ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

NECHES RIVER BASIN, TEXAS

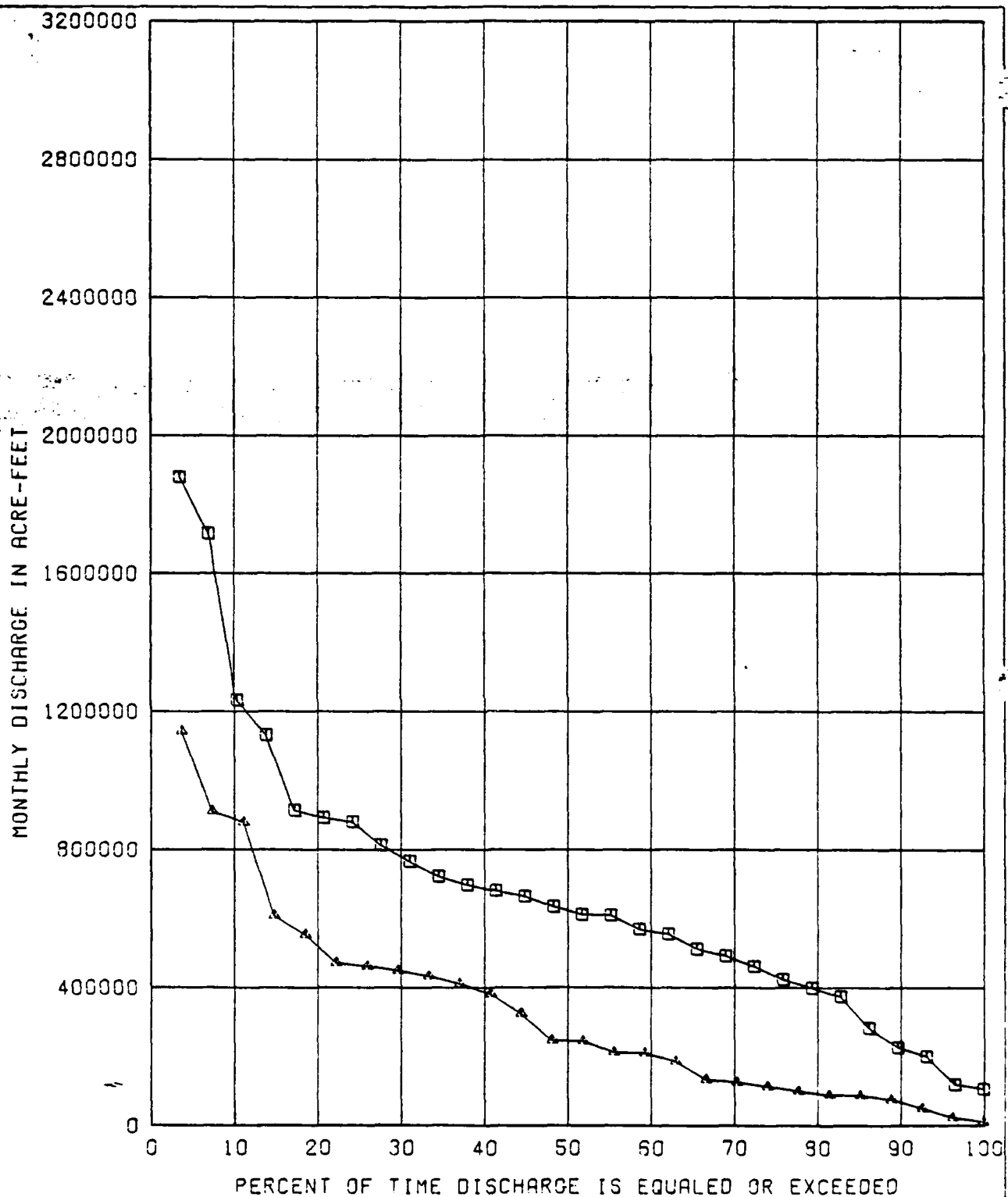
B.A. STEINHAGEN LAKE

FLOW DURATION CURVES AT DAM SITE

JANUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE F3



LEGEND

□ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1921-1950)

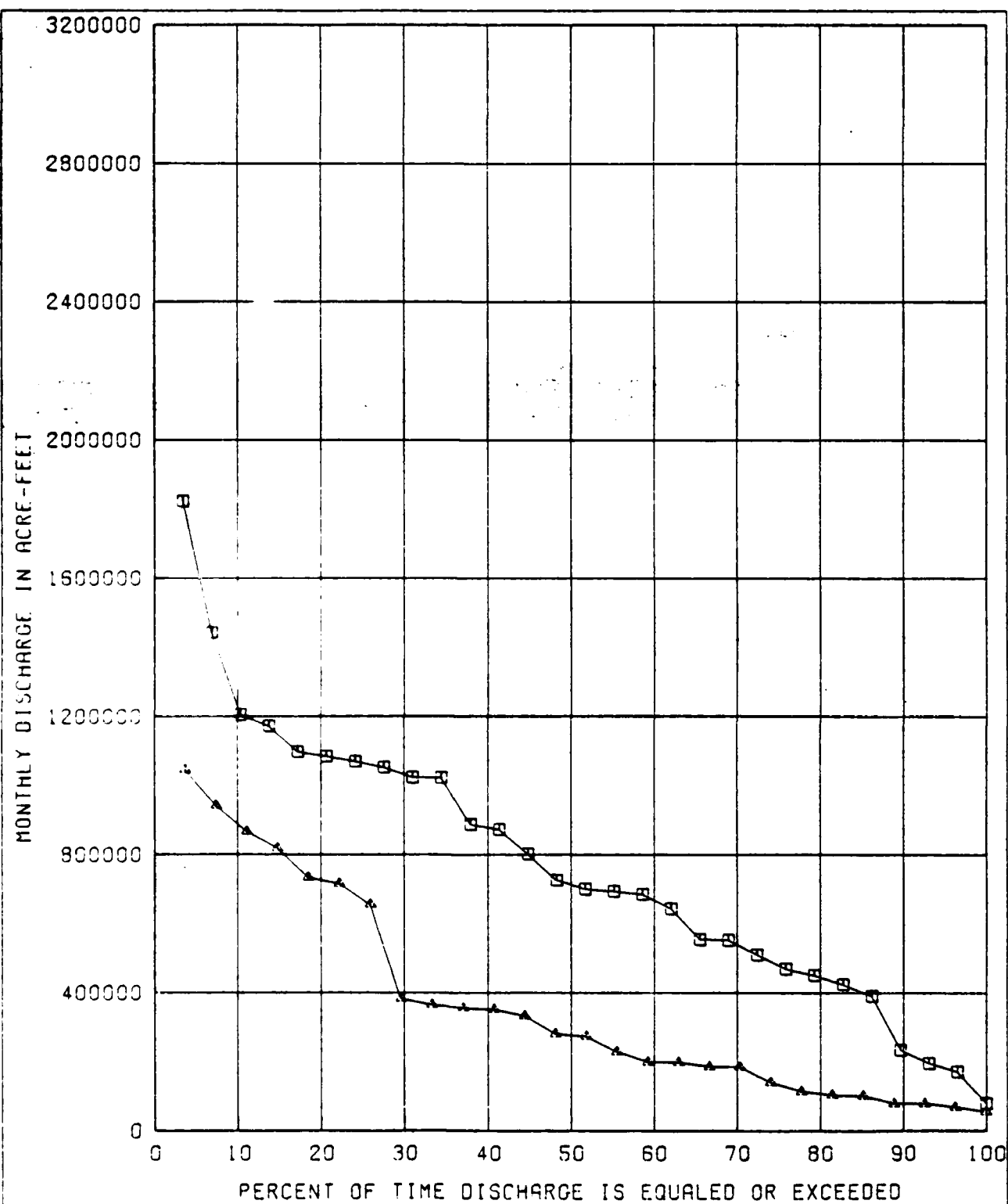
△ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

NECHES RIVER BASIN, TEXAS
B.A. STEINHAGEN LAKE

FLOW DURATION CURVES AT DAM SITE
FEBRUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 14



LEGEND

□ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1921-1950)

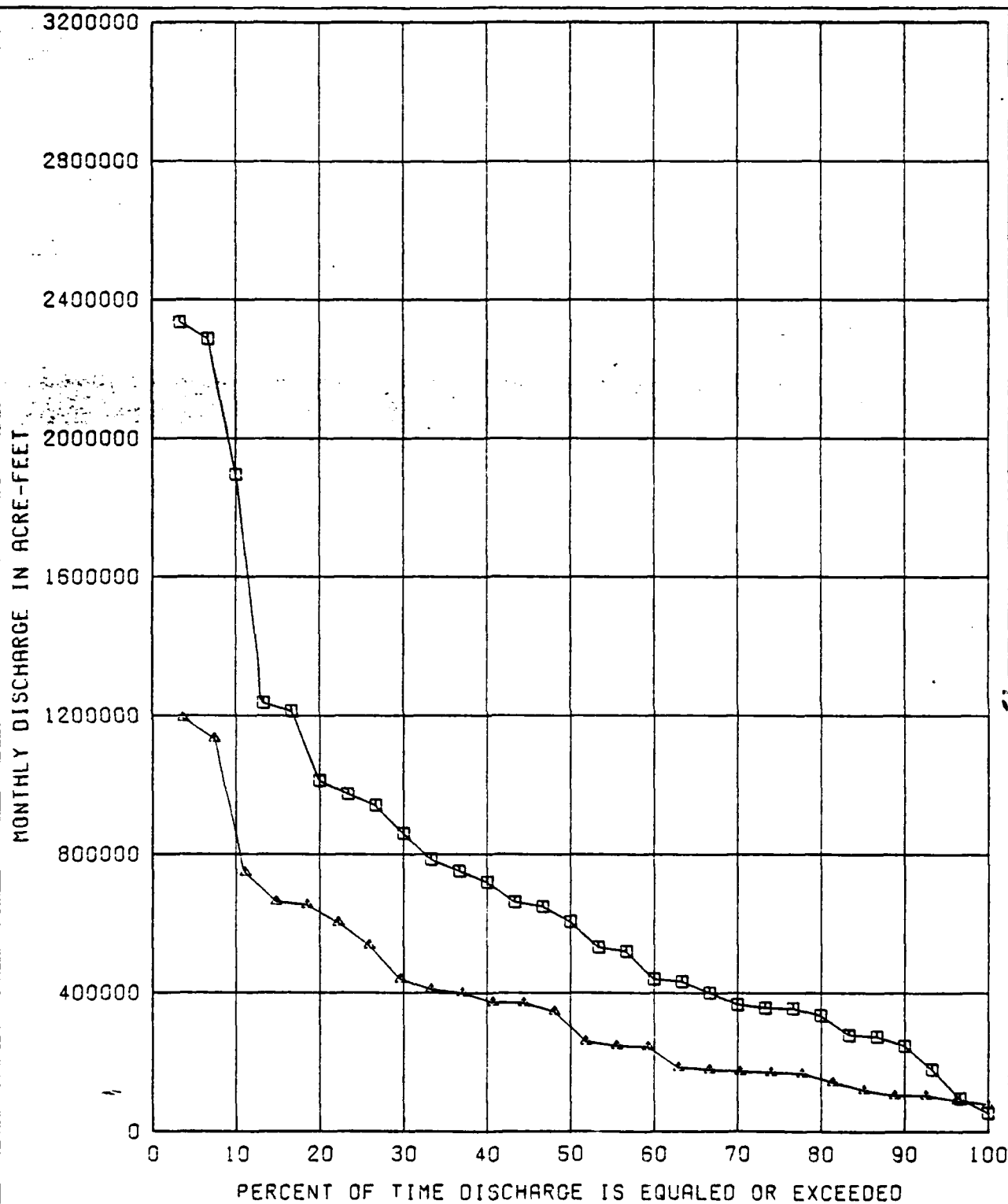
▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

NECHES RIVER BASIN, TEXAS
B.A. STEINHAGEN LAKE

FLOW DURATION CURVES AT DAM SITE
MARCH FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 15



LEGEND

□ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1921-1950)

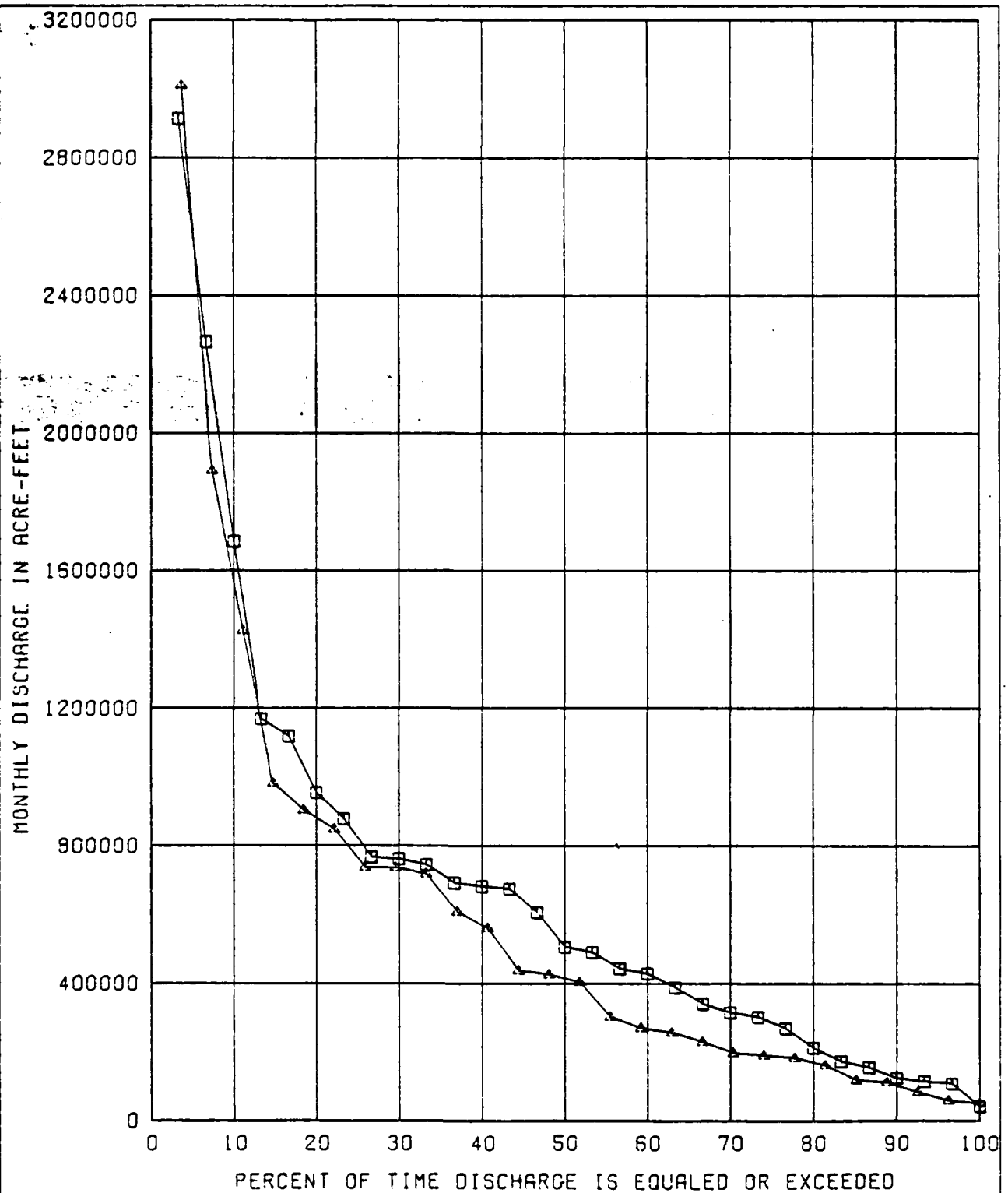
▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

NECHES RIVER BASIN, TEXAS
B.A. STEINHAGEN LAKE

FLOW DURATION CURVES AT DAM SITE
APRIL FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 16



LEGEND

□ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1921-1950)

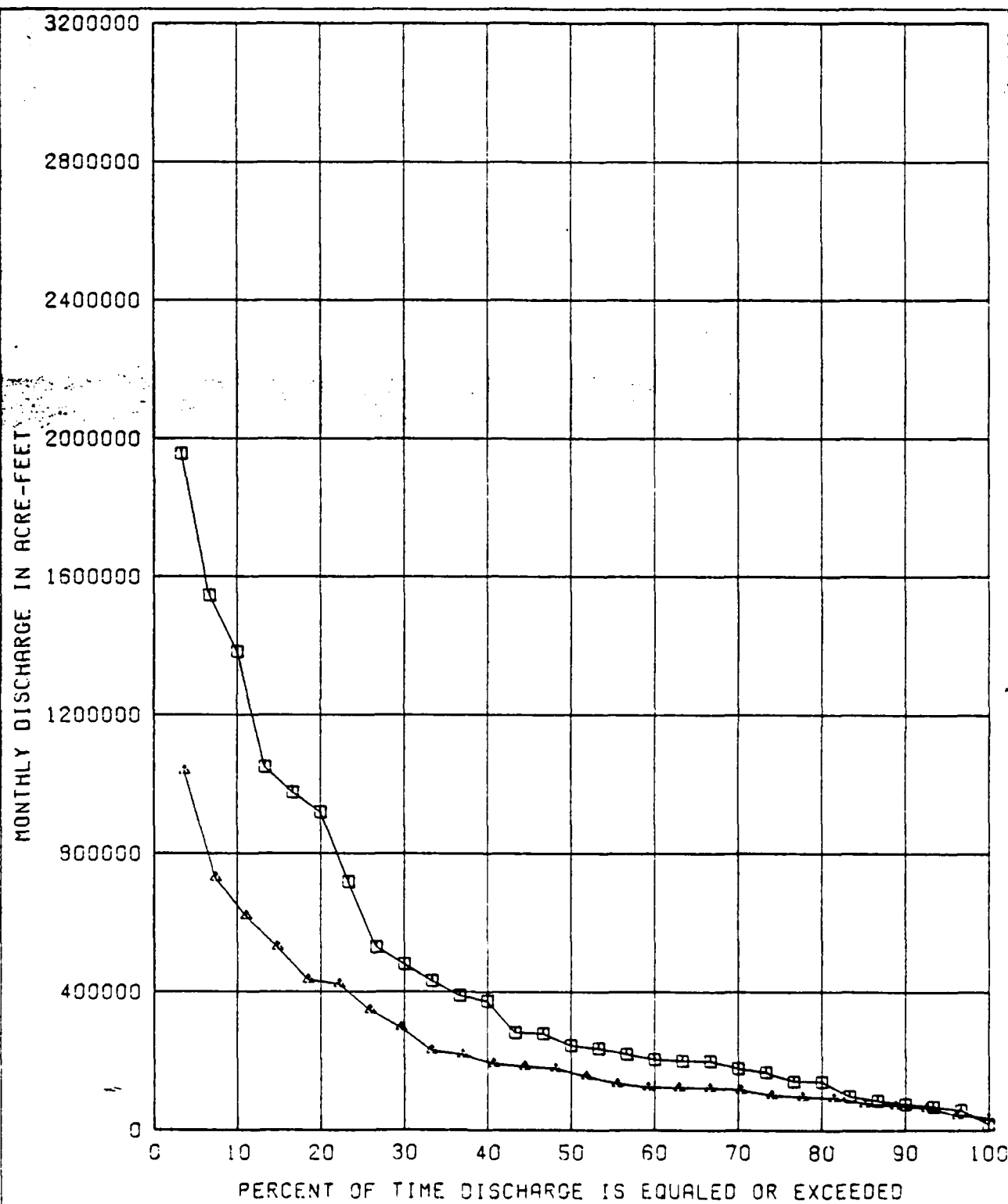
▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

NECHES RIVER BASIN, TEXAS
B.A. STEINHAGEN LAKE

FLOW DURATION CURVES AT DAM SITE
MAY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 17



LEGEND

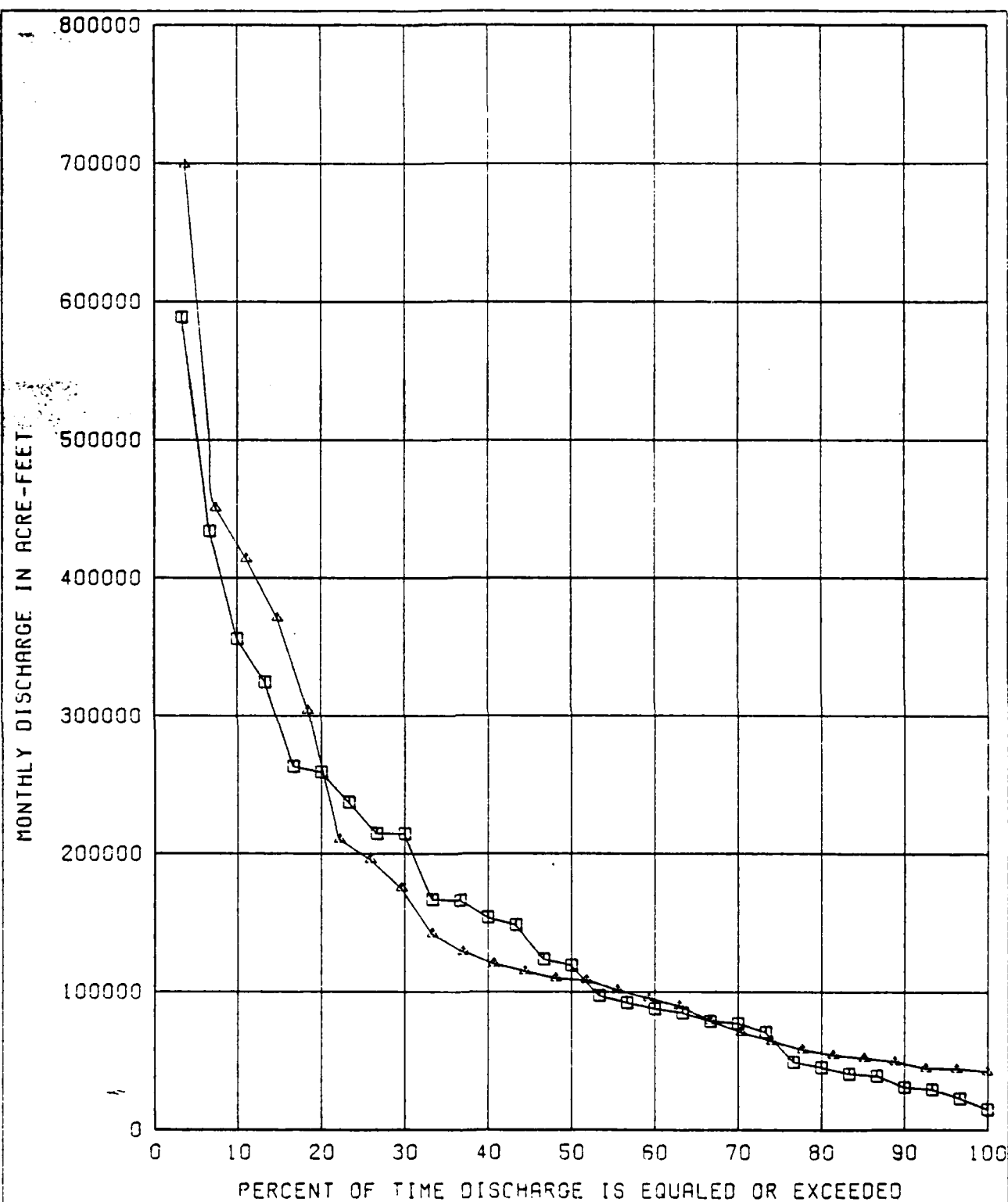
- PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1921-1950)
- ▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

NECHES RIVER BASIN, TEXAS
B.A. STEINHAGEN LAKE

FLOW DURATION CURVES AT DAM SITE
JUNE FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 18



LEGEND

□ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1921-1950)

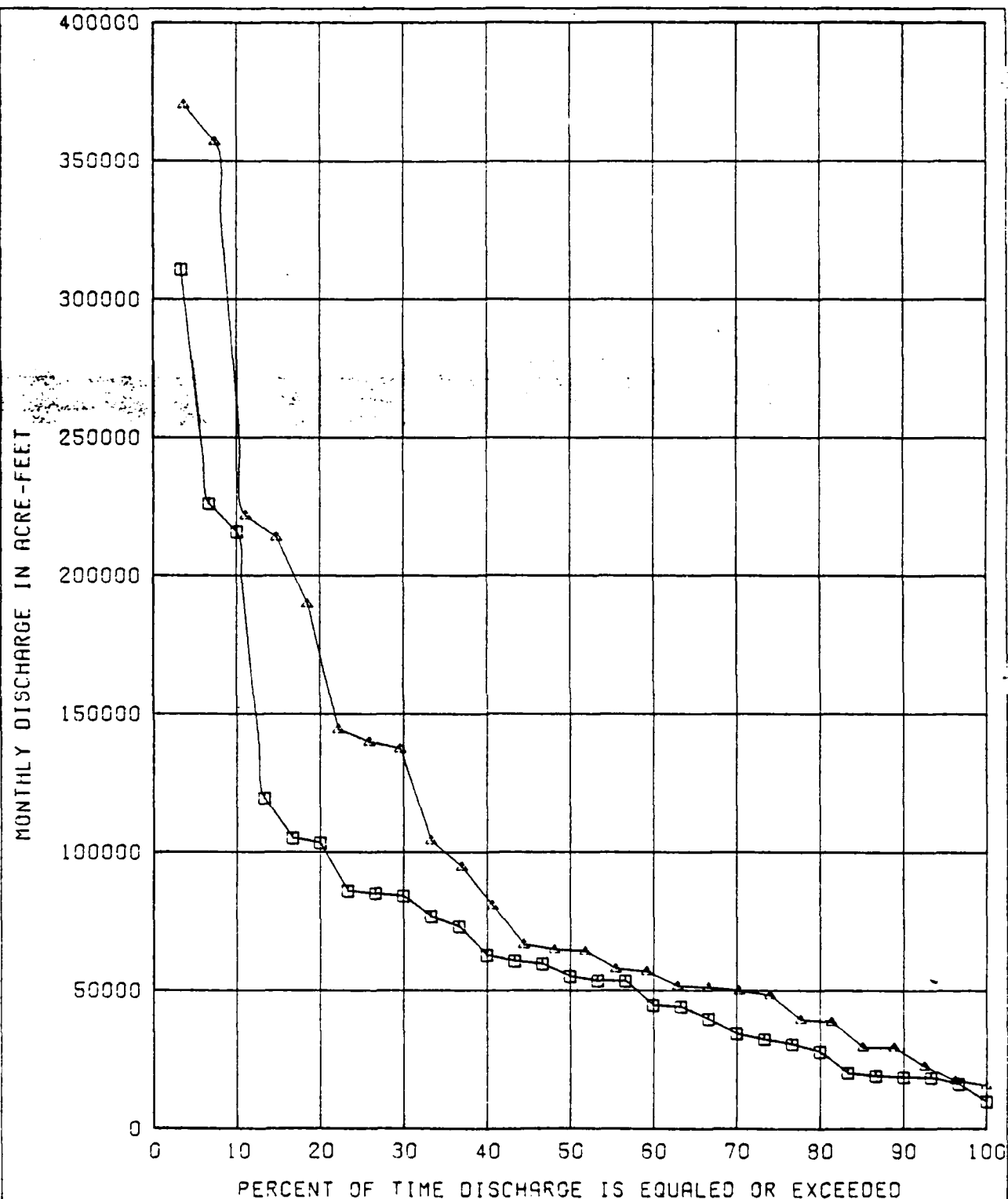
▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

NECHES RIVER BASIN, TEXAS
B.A. STEINHAGEN LAKE

FLOW DURATION CURVES AT DAM SITE
JULY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 19



LEGEND

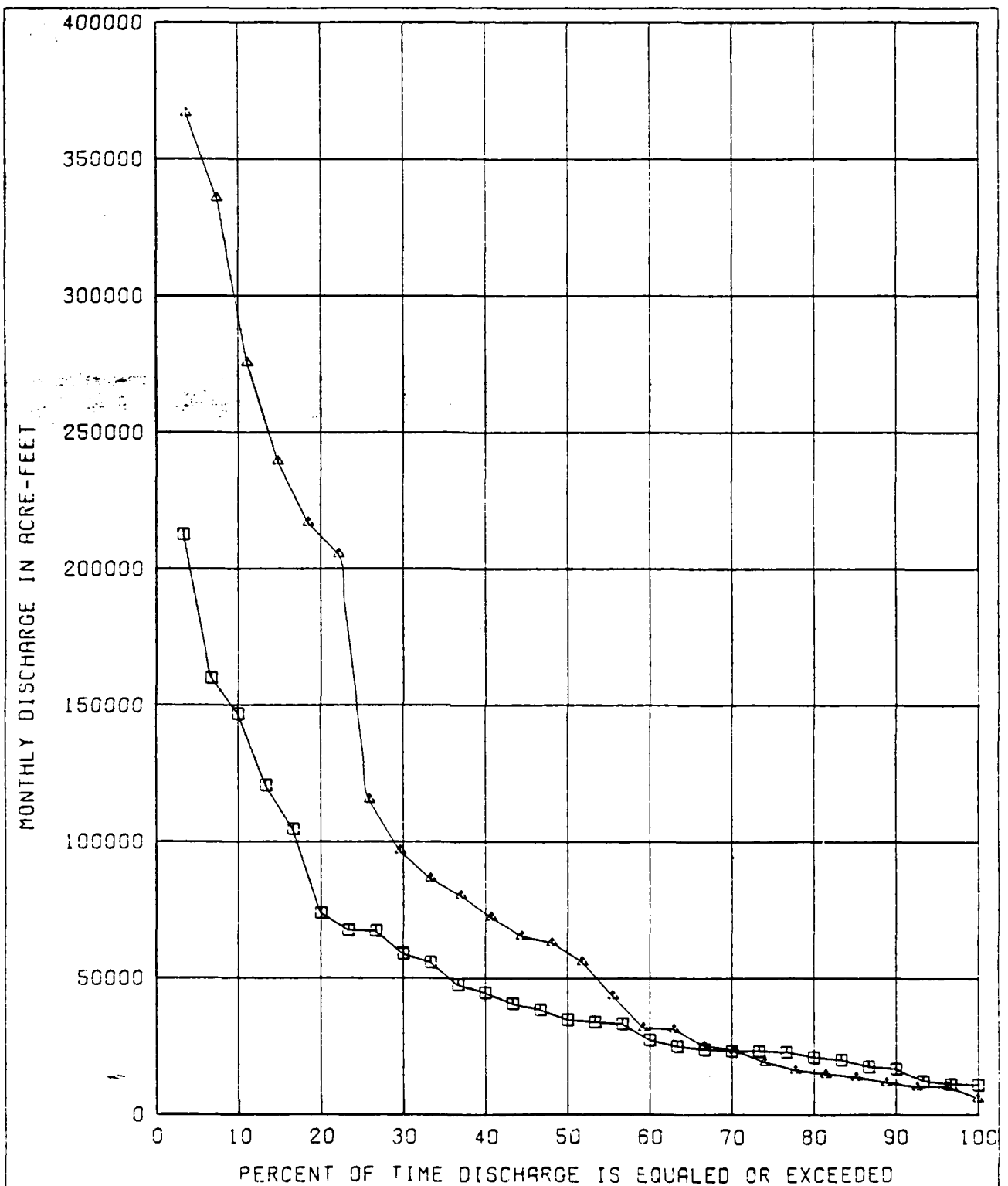
□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1921-1950)

▲ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

NECHES RIVER BASIN, TEXAS
B.A. STEINHAGEN LAKE
FLOW DURATION CURVES AT DAM SITE
AUGUST FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 20



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1921-1950)

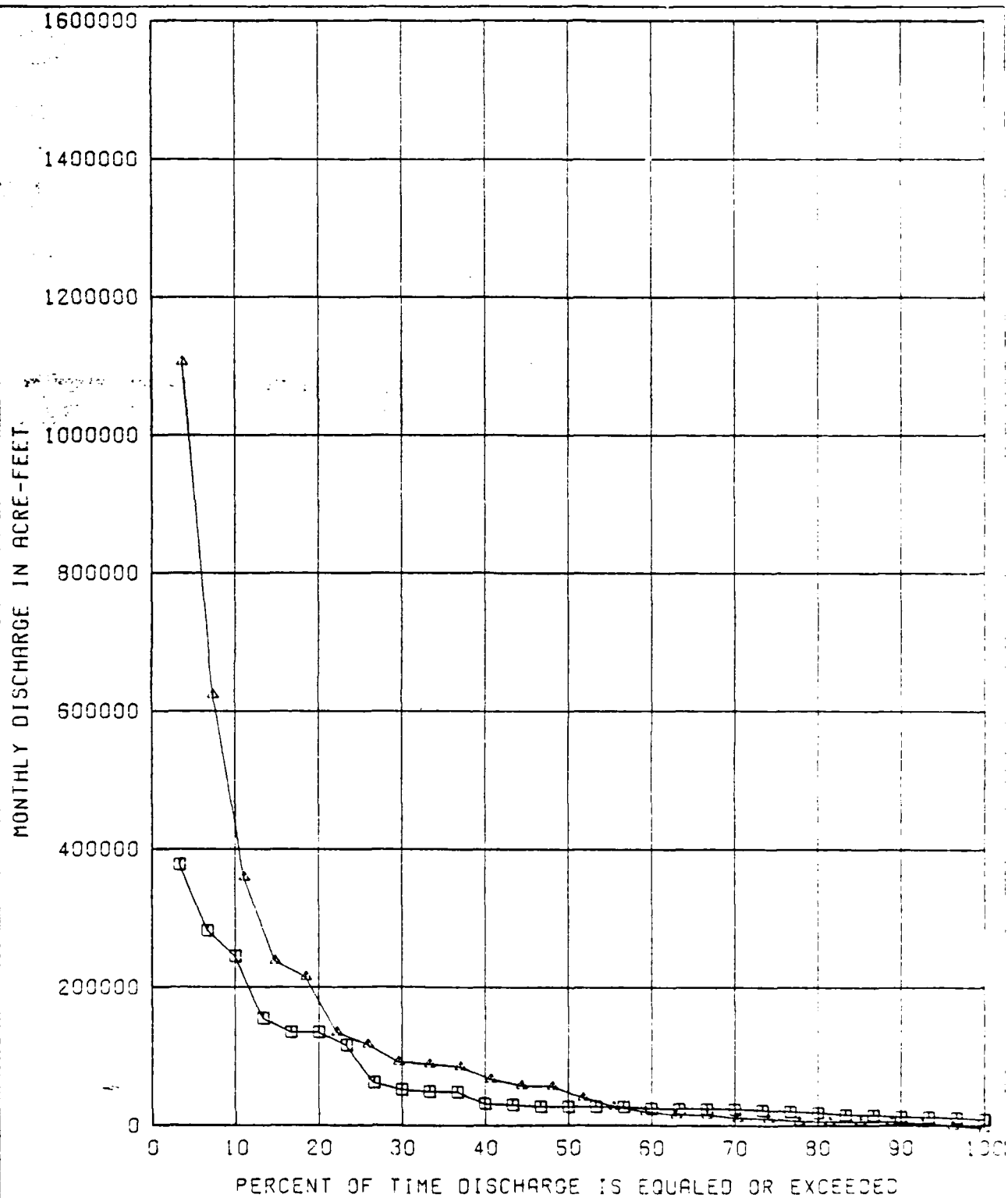
▲ — ▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

NECHES RIVER BASIN, TEXAS
B.A. STEINHAGEN LAKE

FLOW DURATION CURVES AT DAM SITE
SEPTEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 21



LEGEND

□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1921-1950)

▲ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1978)

NECHES RIVER BASIN, TEXAS

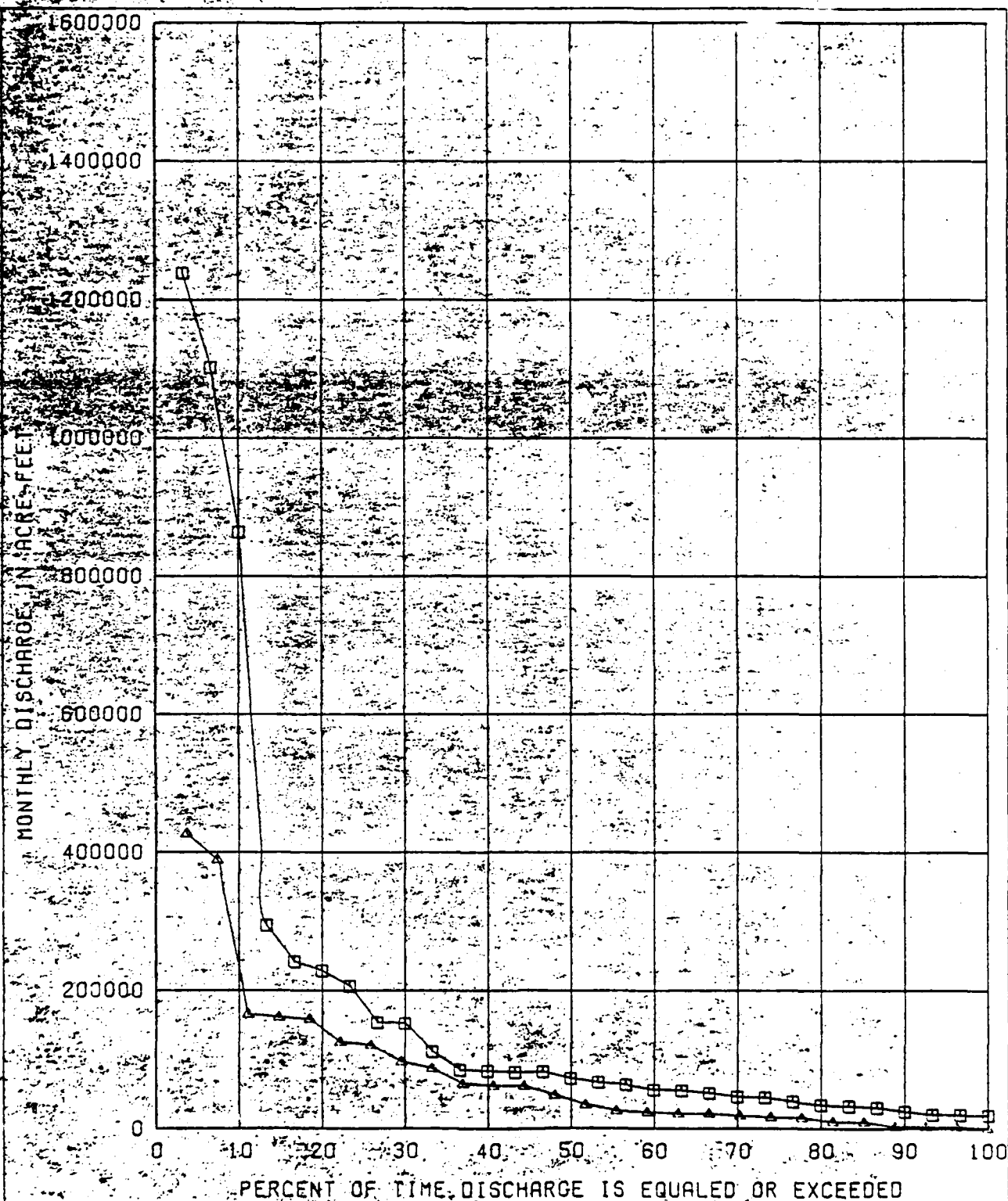
B.A. STEINHAGEN LAKE

FLOW DURATION CURVES AT DAM SITE

OCTOBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

*PLATE 22



LEGEND

- — PRE-IMPOUNDMENT CONDITIONS
 (PERIOD OF RECORD 1921-1950)
 ▲ — POST-IMPOUNDMENT CONDITIONS
 (PERIOD OF RECORD 1952-1977)

NECHES RIVER BASIN, TEXAS

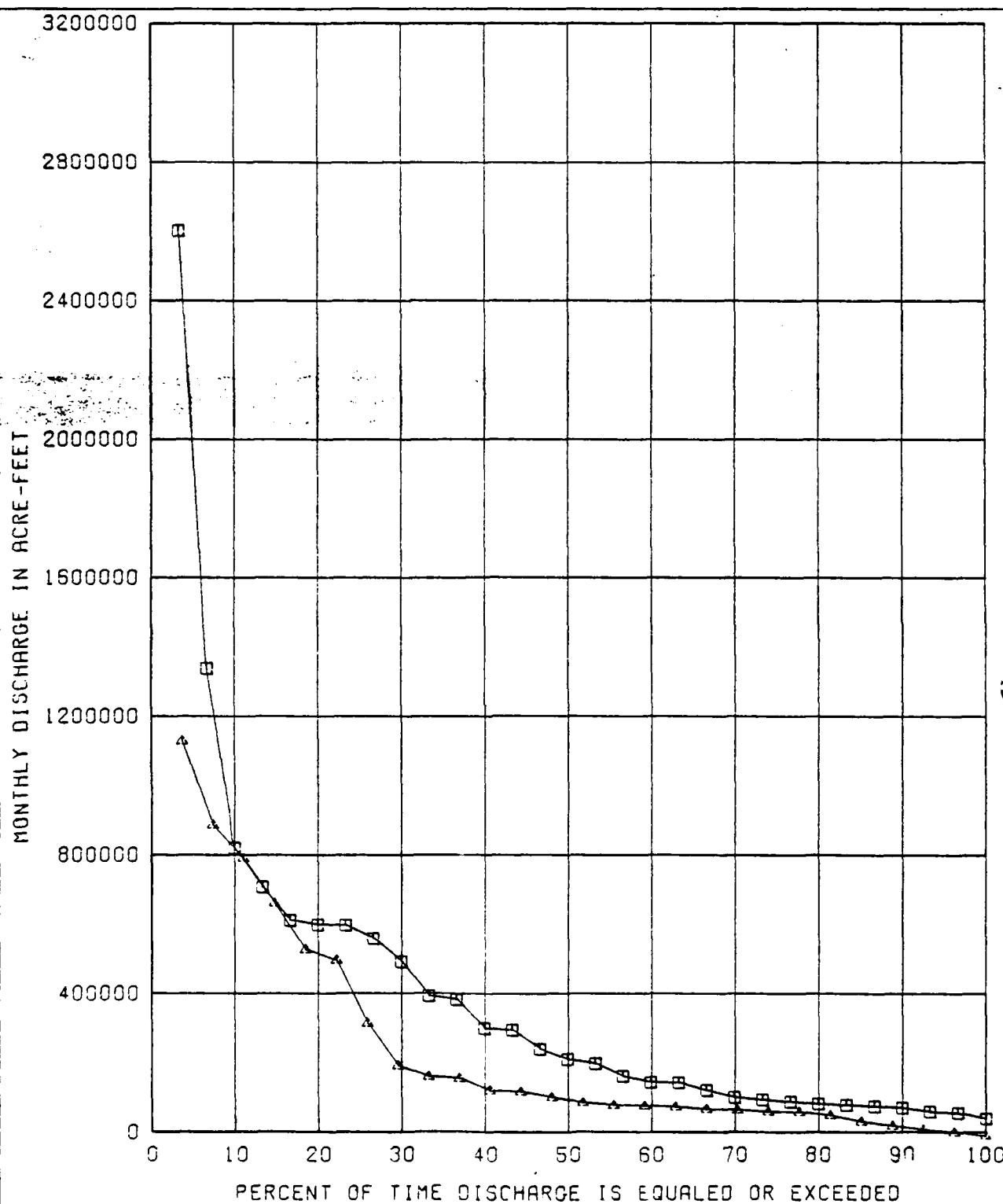
B-A STEINHAGEN LAKE

FLOW DURATION CURVES AT DAM SITE

NOVEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
 TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
 EVALUATION REPORT OF DECEMBER 1980

PLATE 23



LEGEND

□ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1921-1950)

▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

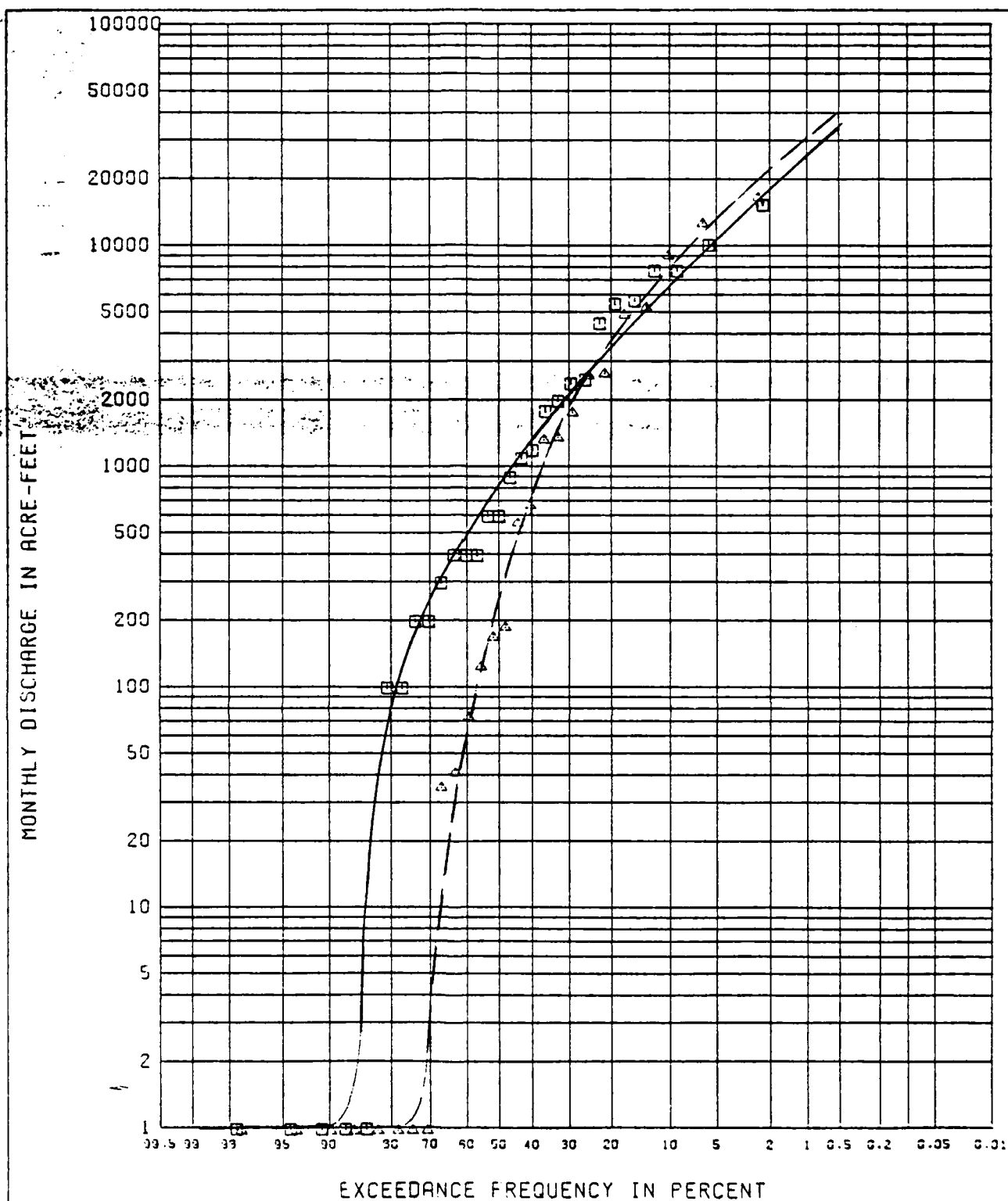
NECHES RIVER BASIN, TEXAS

B.A. STEINHAGEN LAKE

FLOW DURATION CURVES AT DAM SITE
DECEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 24



LEGEND

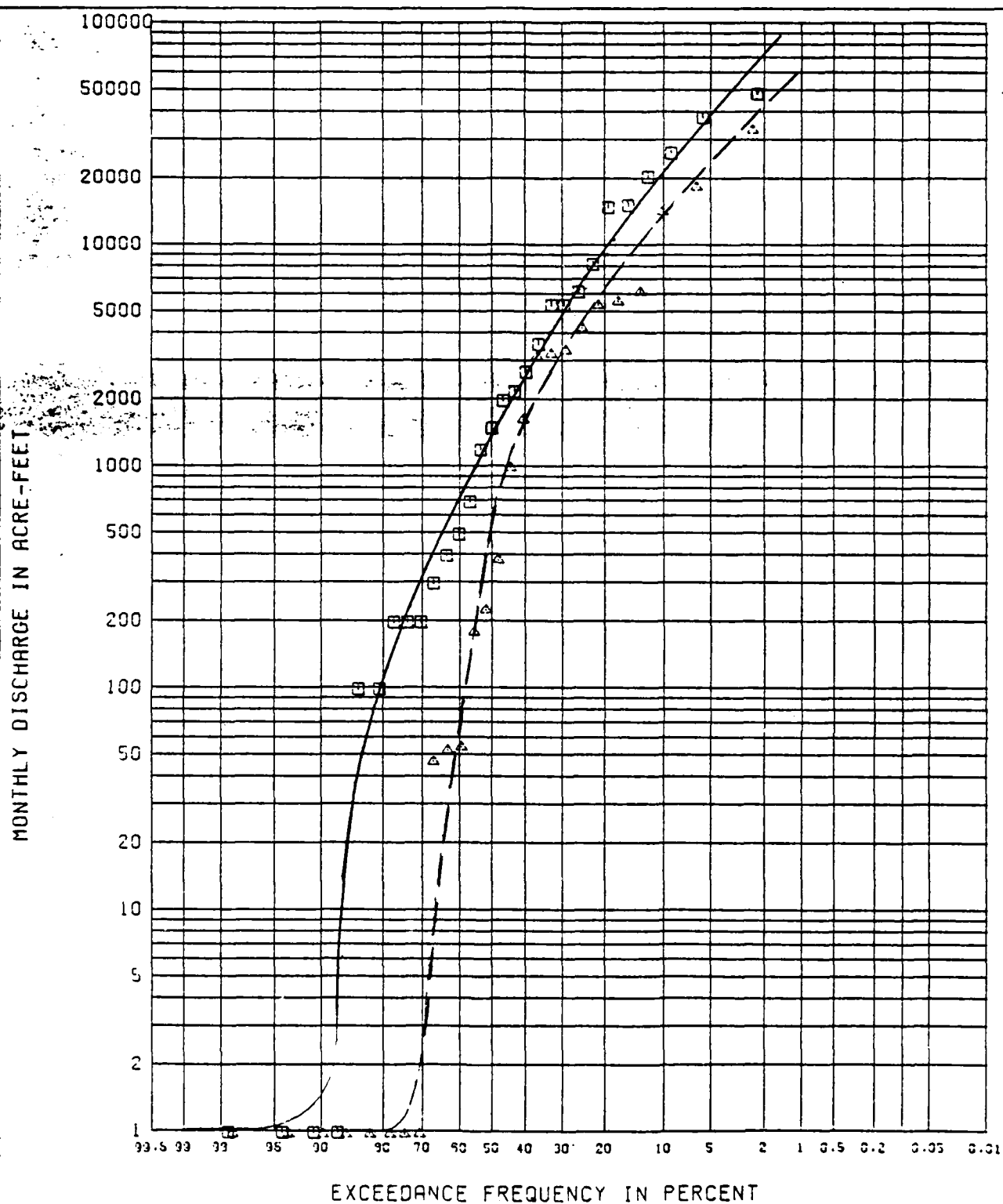
—■— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1952)

-△- POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

TRINITY RIVER BASIN, TEXAS
BENBROOK LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
JANUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE I



LEGEND

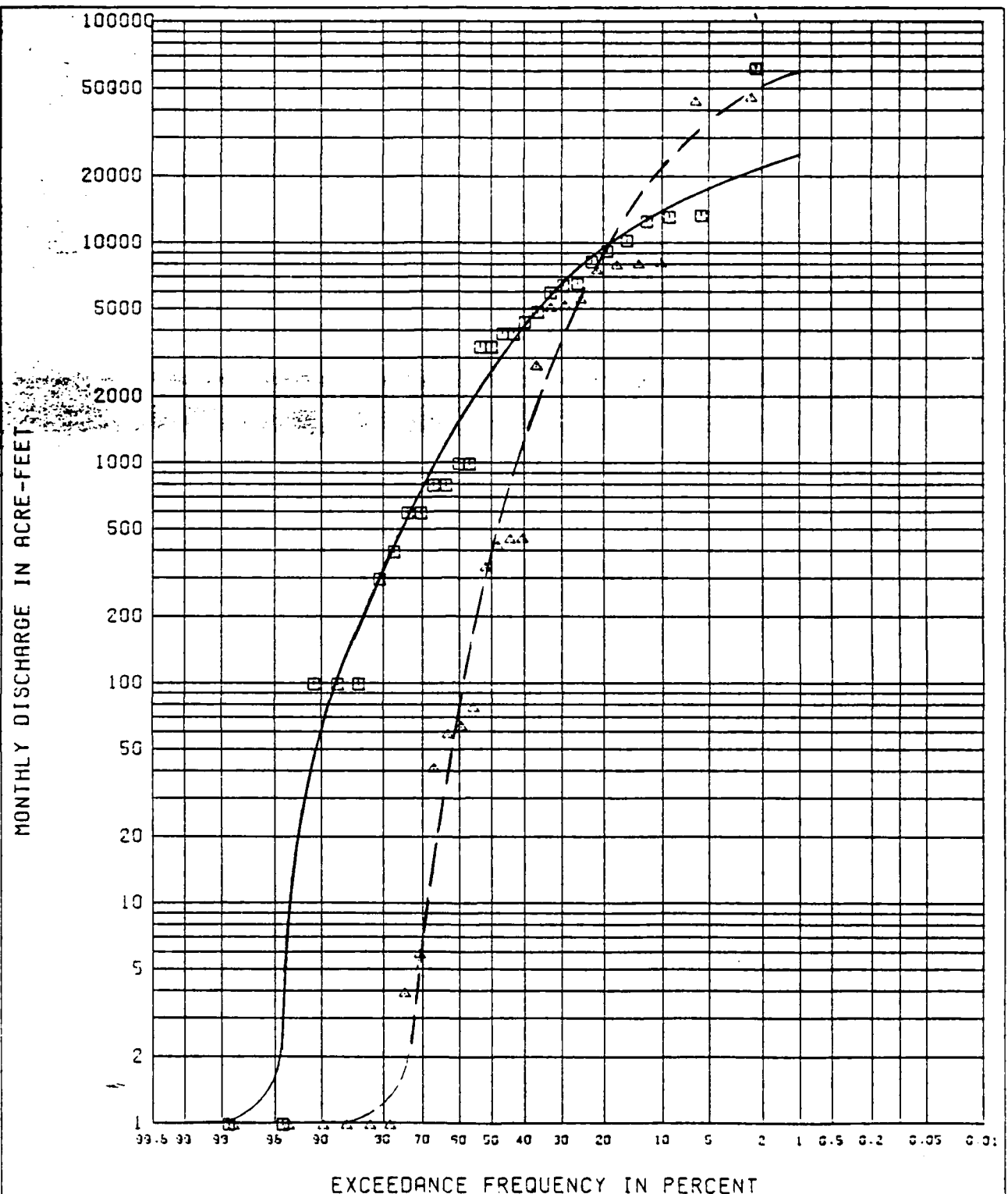
- — □ PRE-IMPOUNDMENT CONDITIONS
 (PERIOD OF RECORD 1924-1952)
- △ — △ POST-IMPOUNDMENT CONDITIONS
 (PERIOD OF RECORD 1953-1979)

TRINITY RIVER BASIN, TEXAS

BENBROOK LAKE
 DISCHARGE-FREQUENCY RELATIONS
 AT DAM SITE
 FEBRUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
 TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
 EVALUATION REPORT OF DECEMBER 1980

PLATE 2



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1952)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

TRINITY RIVER BASIN, TEXAS

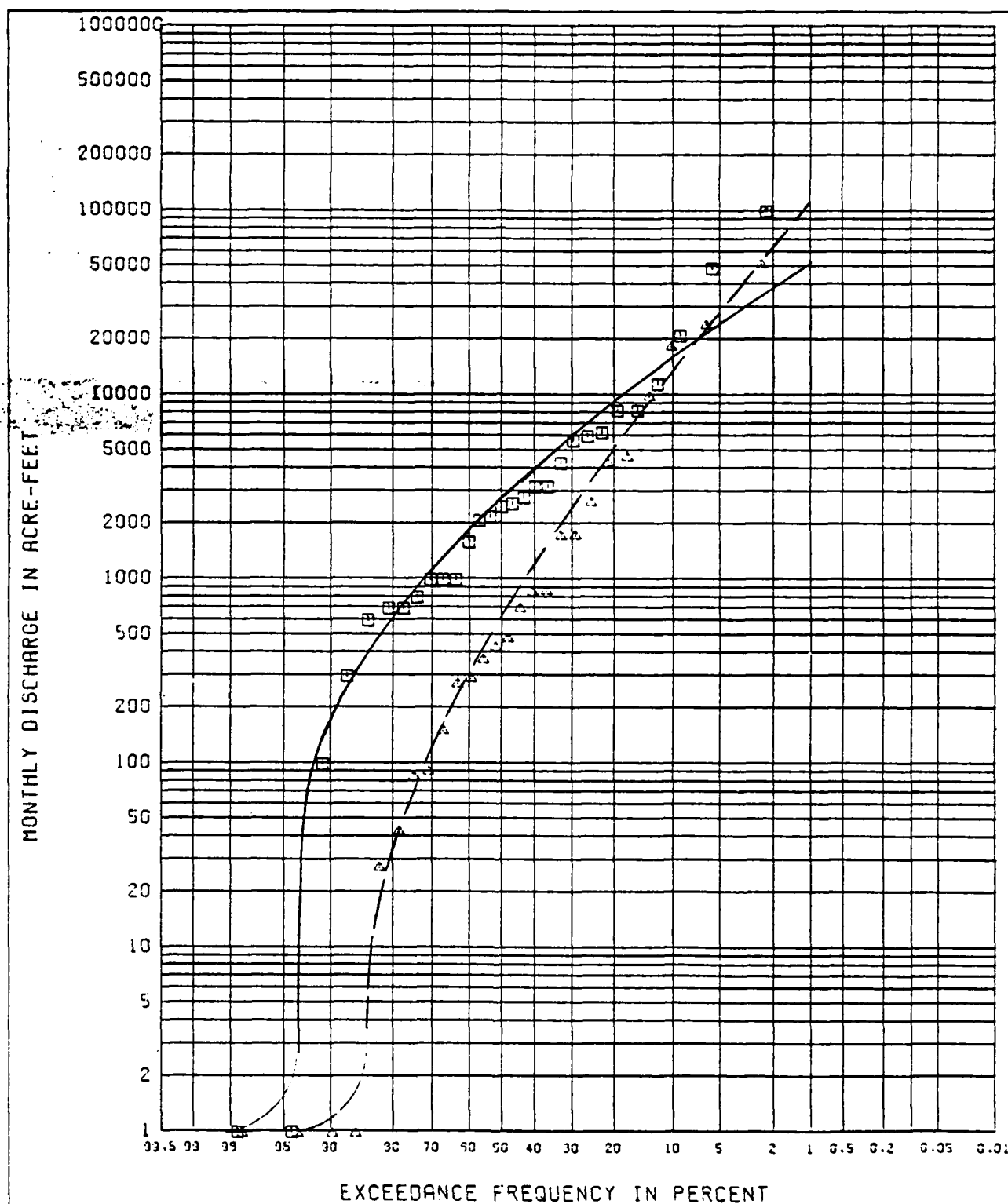
BENBROOK LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

MARCH FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 3



LEGEND

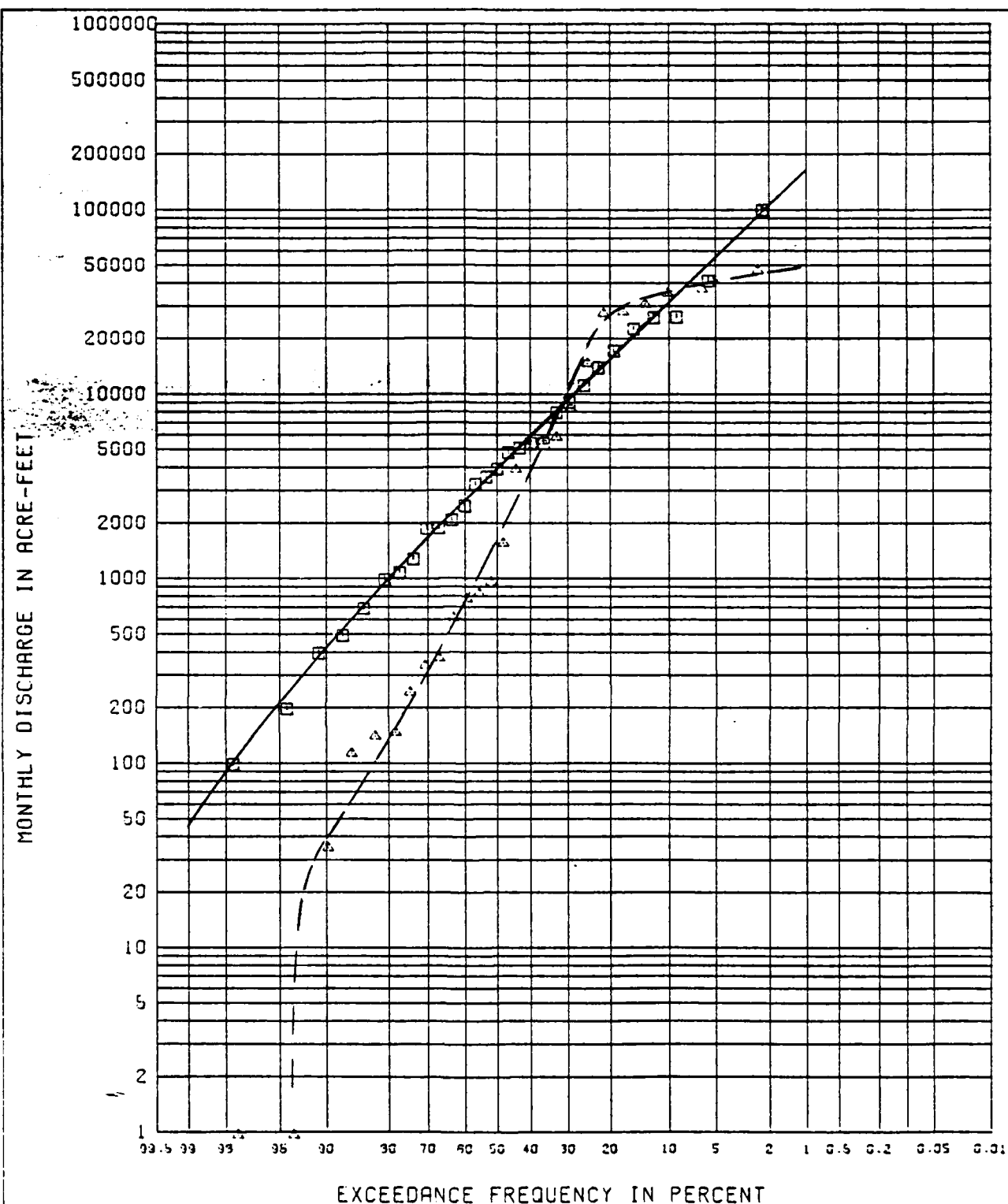
— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1952)

- - - POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

TRINITY RIVER BASIN, TEXAS
BENBROOK LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
APRIL FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 4



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1952)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

TRINITY RIVER BASIN, TEXAS

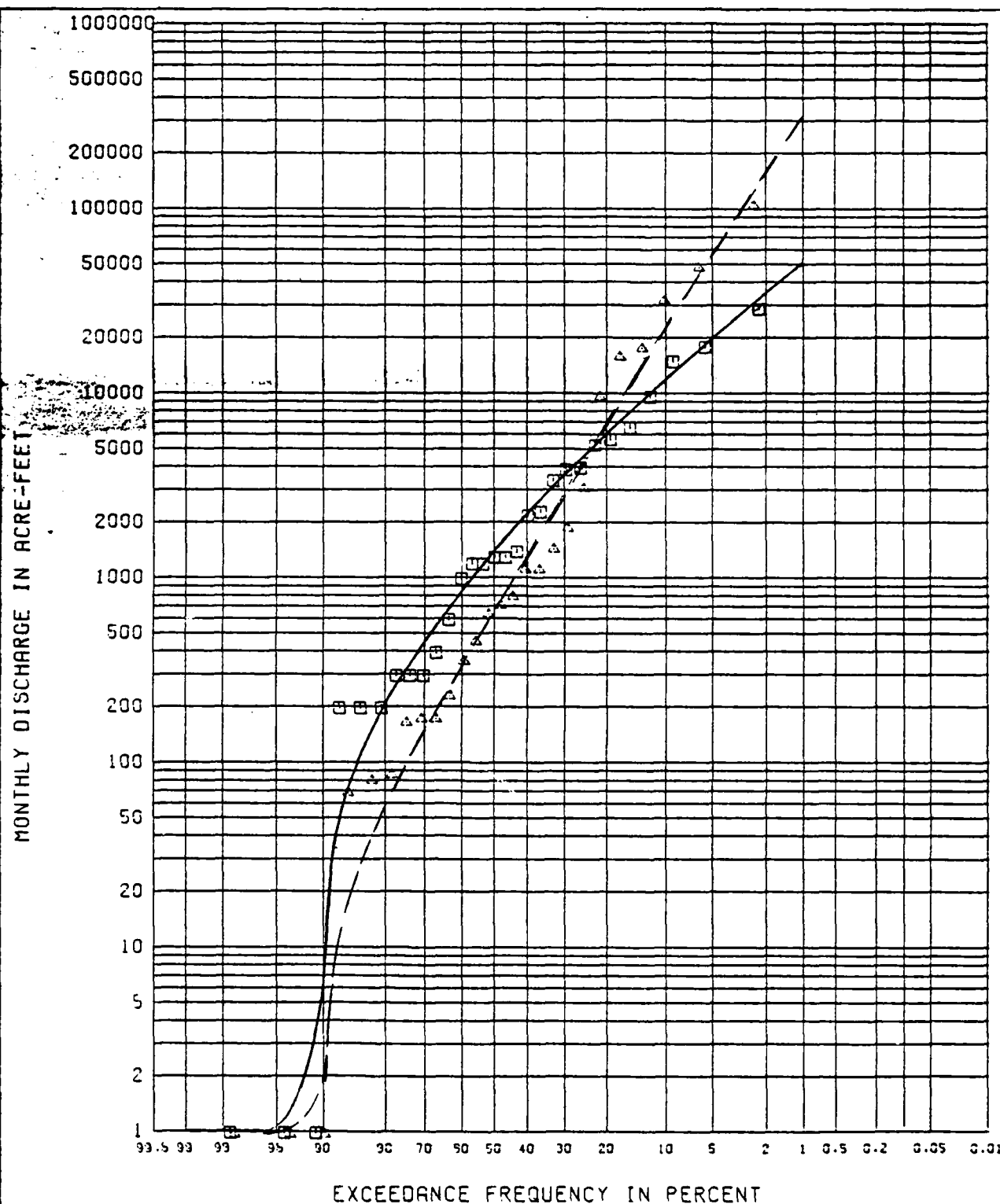
BENBROOK LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

MAY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 5



LEGEND

—■— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1952)

- - -▲- POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

TRINITY RIVER BASIN, TEXAS

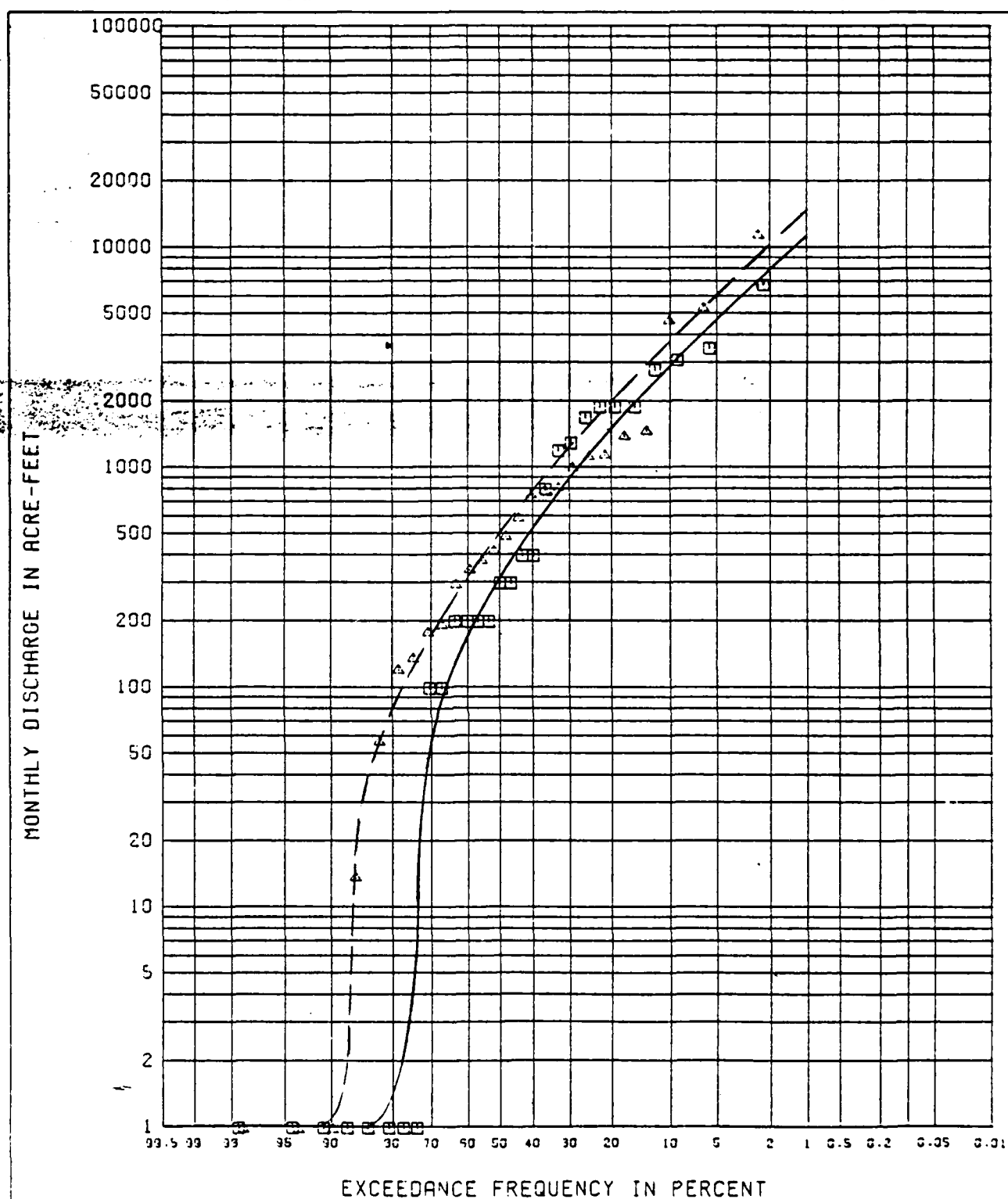
BENBROOK LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

JUNE FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 6



LEGEND

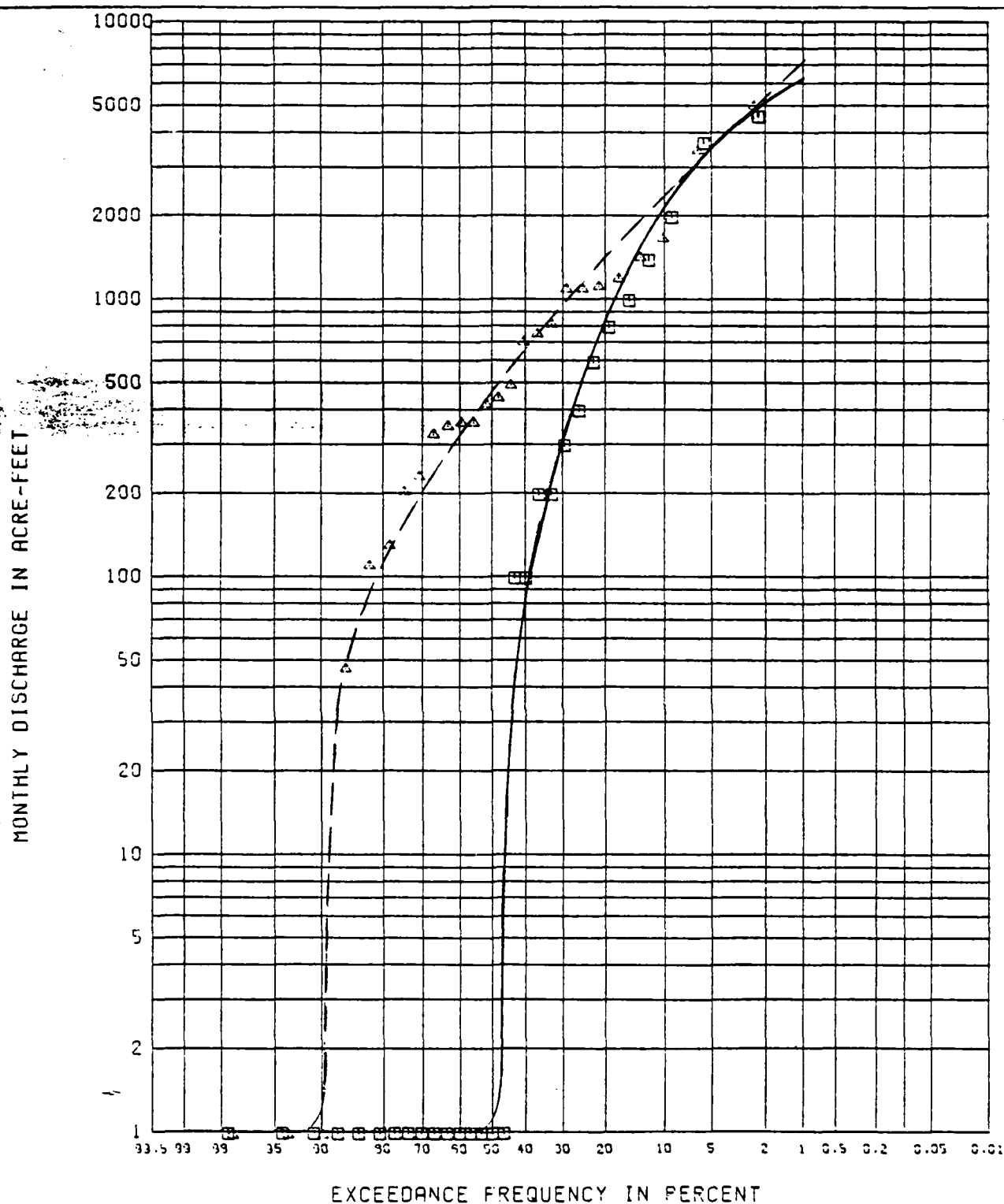
□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1952)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

TRINITY RIVER BASIN, TEXAS
BENBROOK LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
JULY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 7



LEGEND

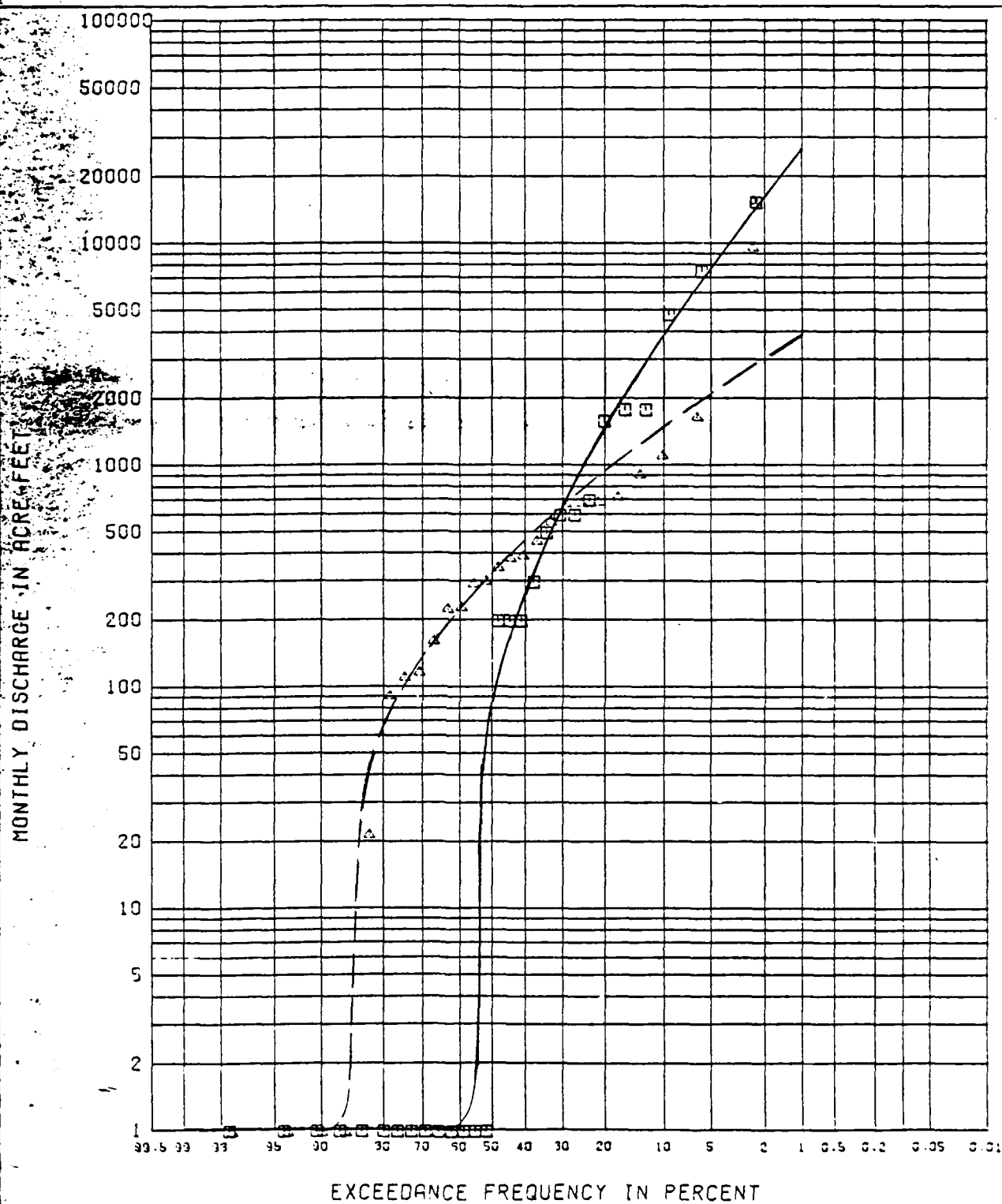
—■— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1952)

- - -△- POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

TRINITY RIVER BASIN, TEXAS
BENBROOK LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
AUGUST FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 8



LEGEND

—□— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1952)

—△— POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

TRINITY RIVER BASIN, TEXAS

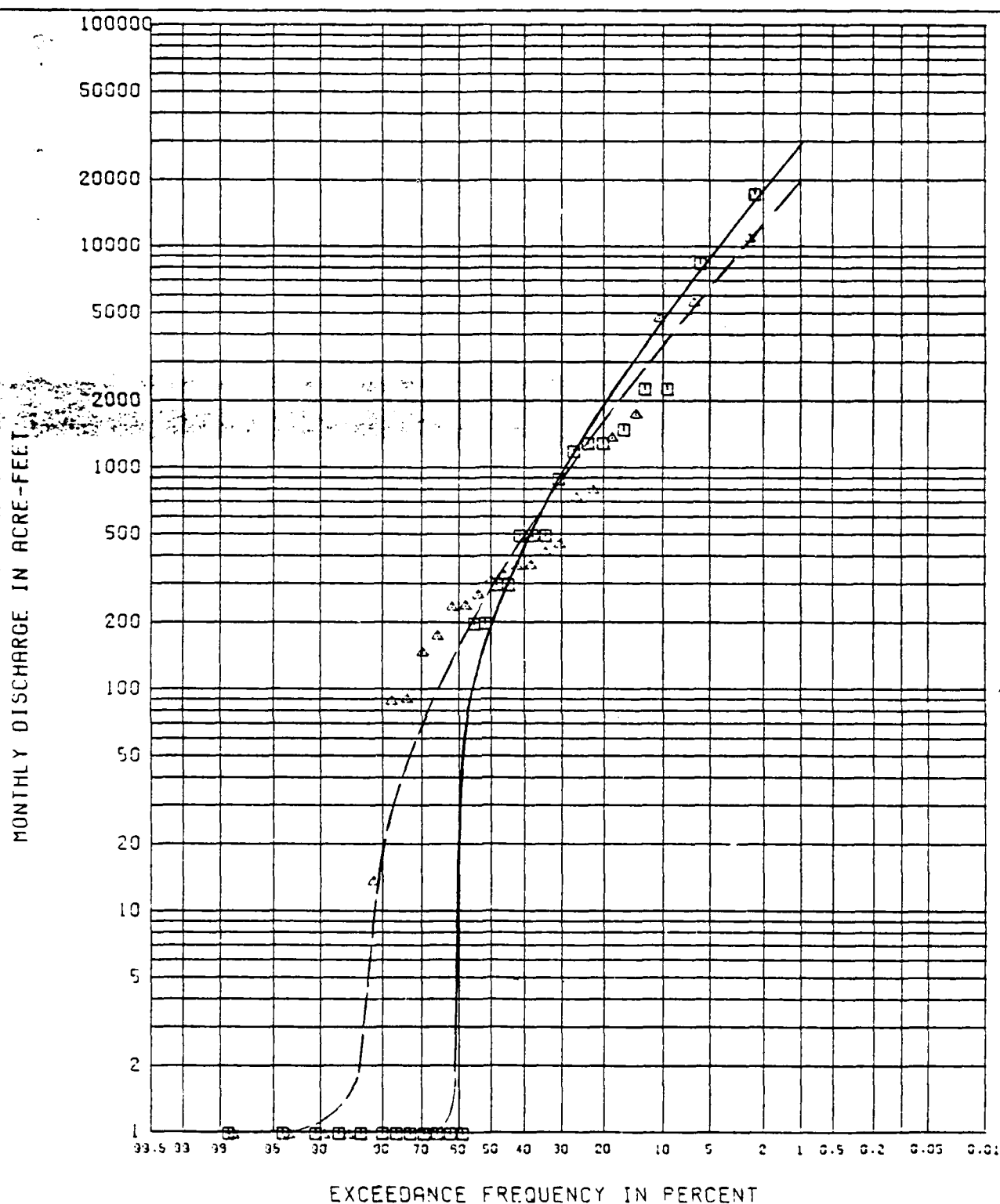
BENBROOK LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

SEPTEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 9



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1952)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

TRINITY RIVER BASIN, TEXAS

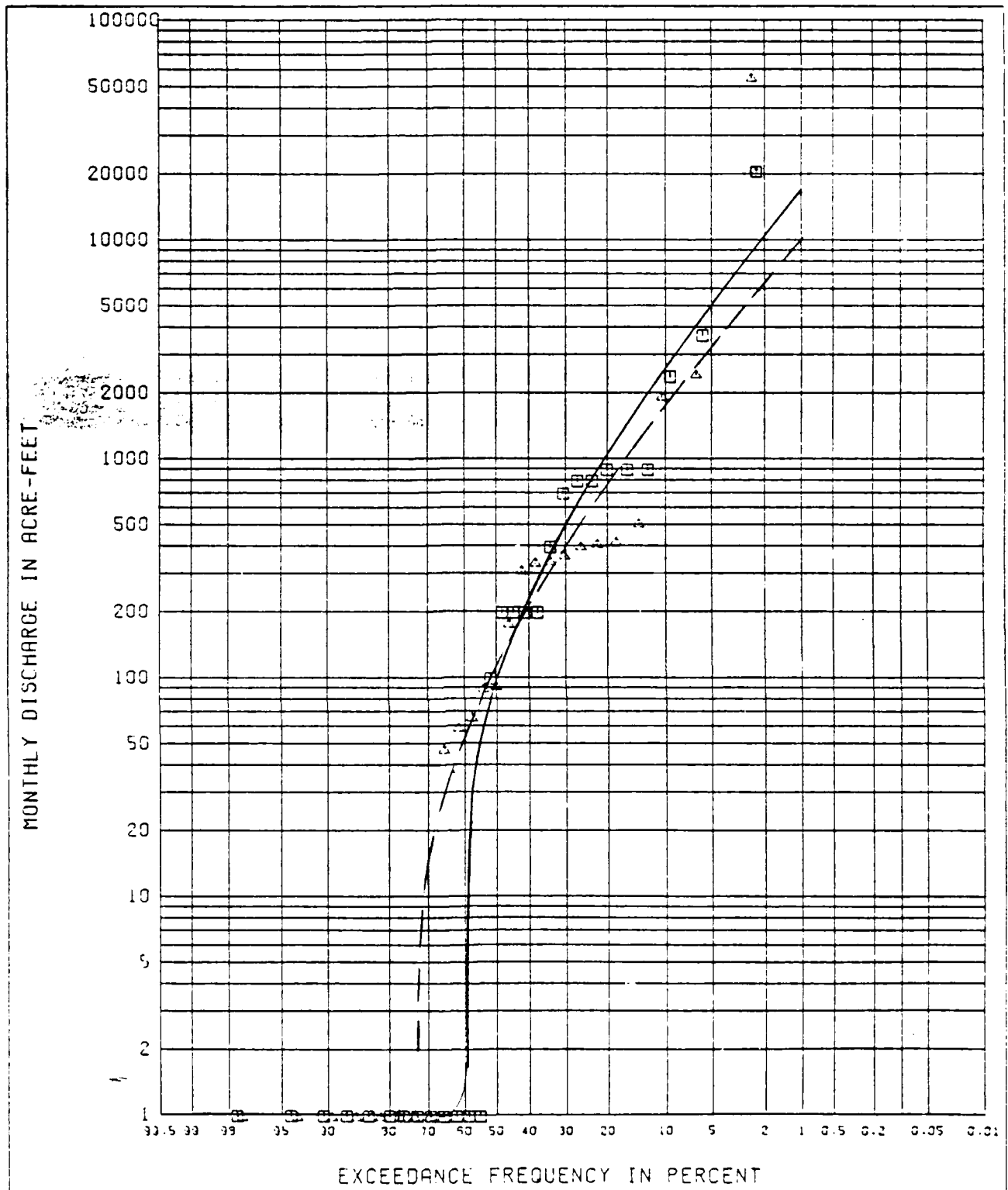
BENBROOK LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

OCTOBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 10



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1952)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

TRINITY RIVER BASIN, TEXAS

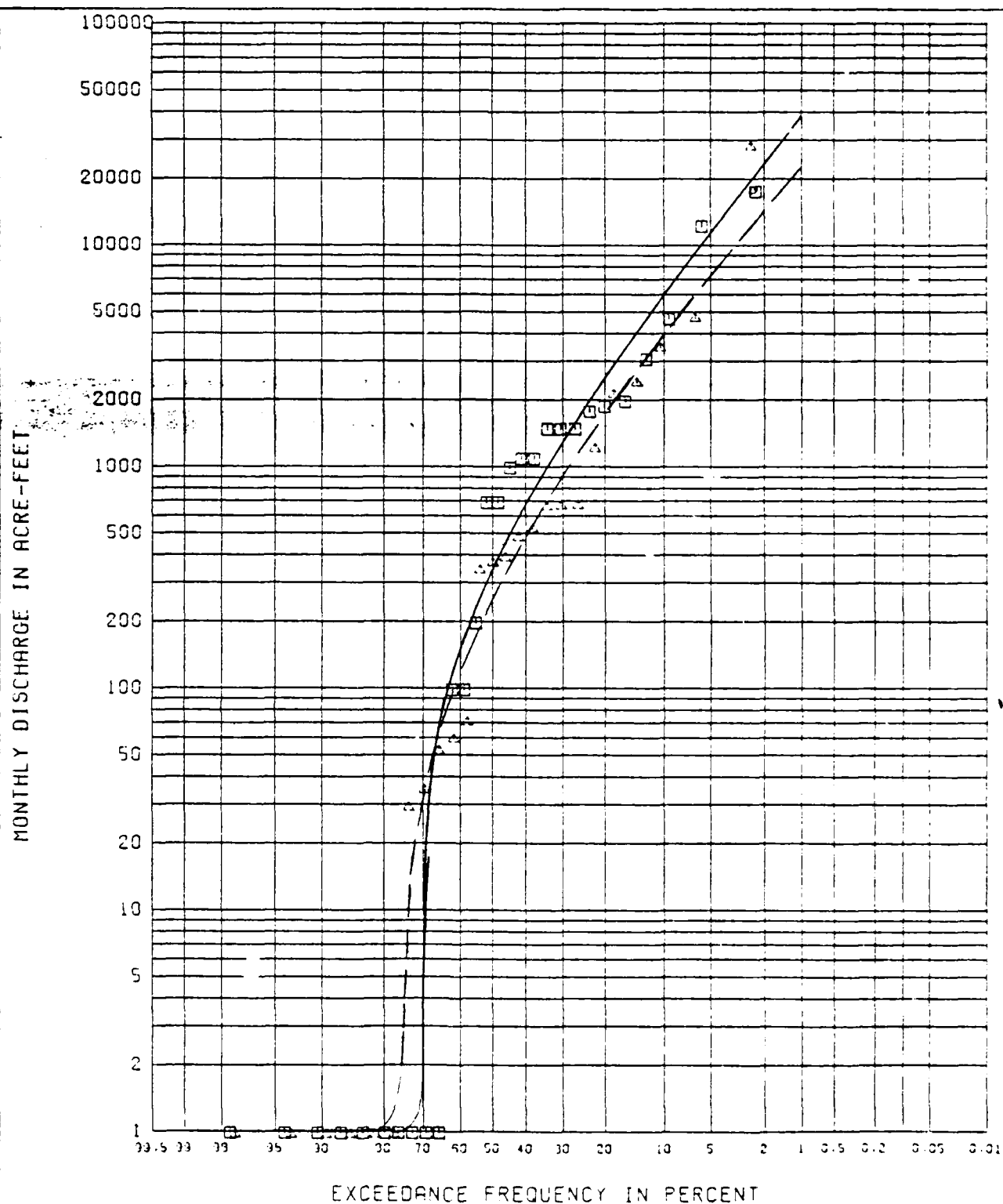
BENBROOK LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

NOVEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 11



LEGEND

— □ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1952)

— △ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

TRINITY RIVER BASIN, TEXAS

BENBROOK LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

DECEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

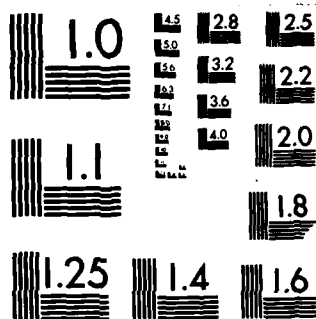
- PLATE 12

UNCLASSIFIED

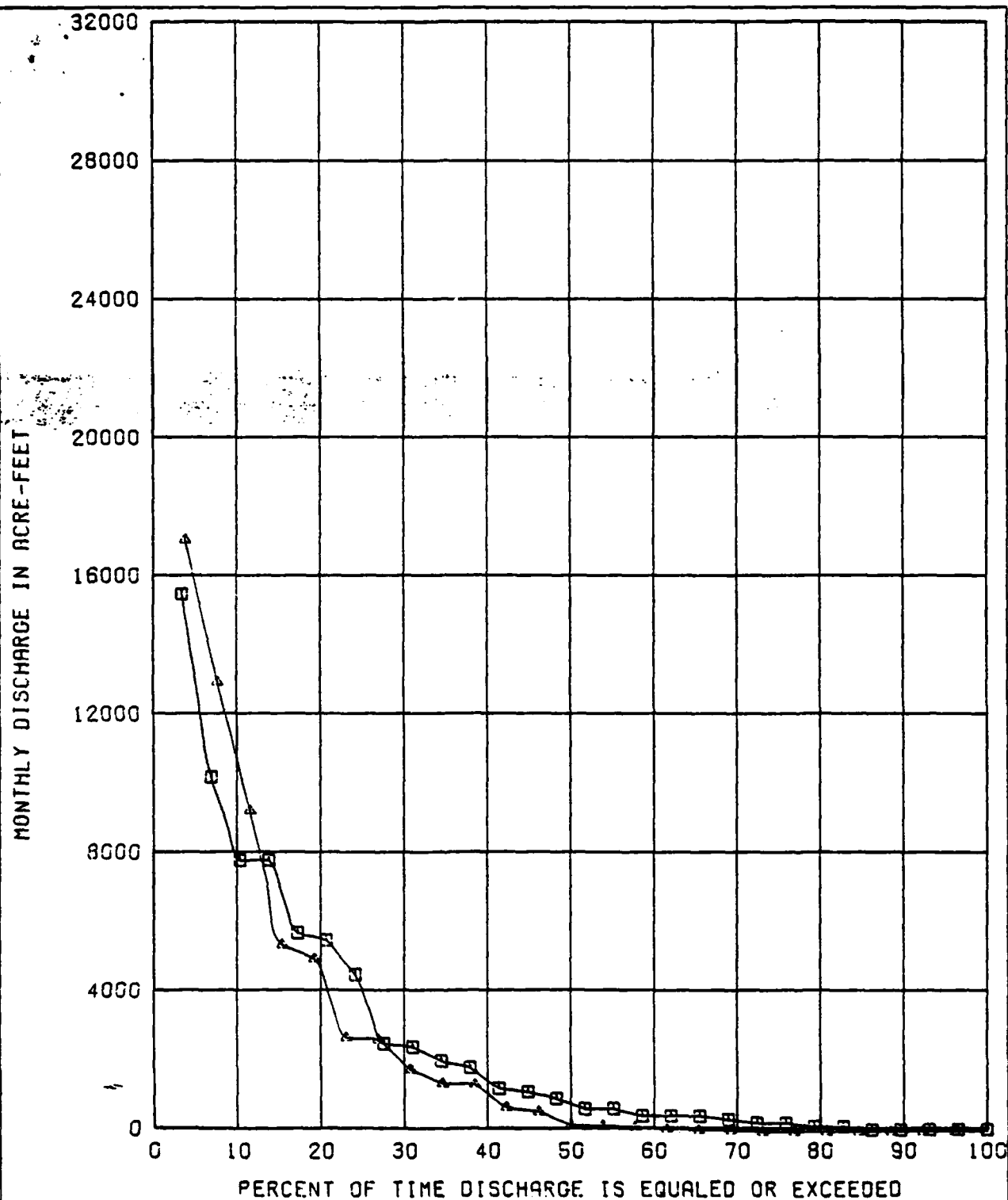
RESERVOIR CONTROL CENTER: ACTIVITIES AND ACCOMPLISHMENTS OF THE SOUTHWEST. (U) CORPS OF ENGINEERS DALLAS TX SOUTHWESTERN DIV JAN 81

NL

F/G 13/2



MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A



LEGEND

□ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1952)

△ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

TRINITY RIVER BASIN, TEXAS

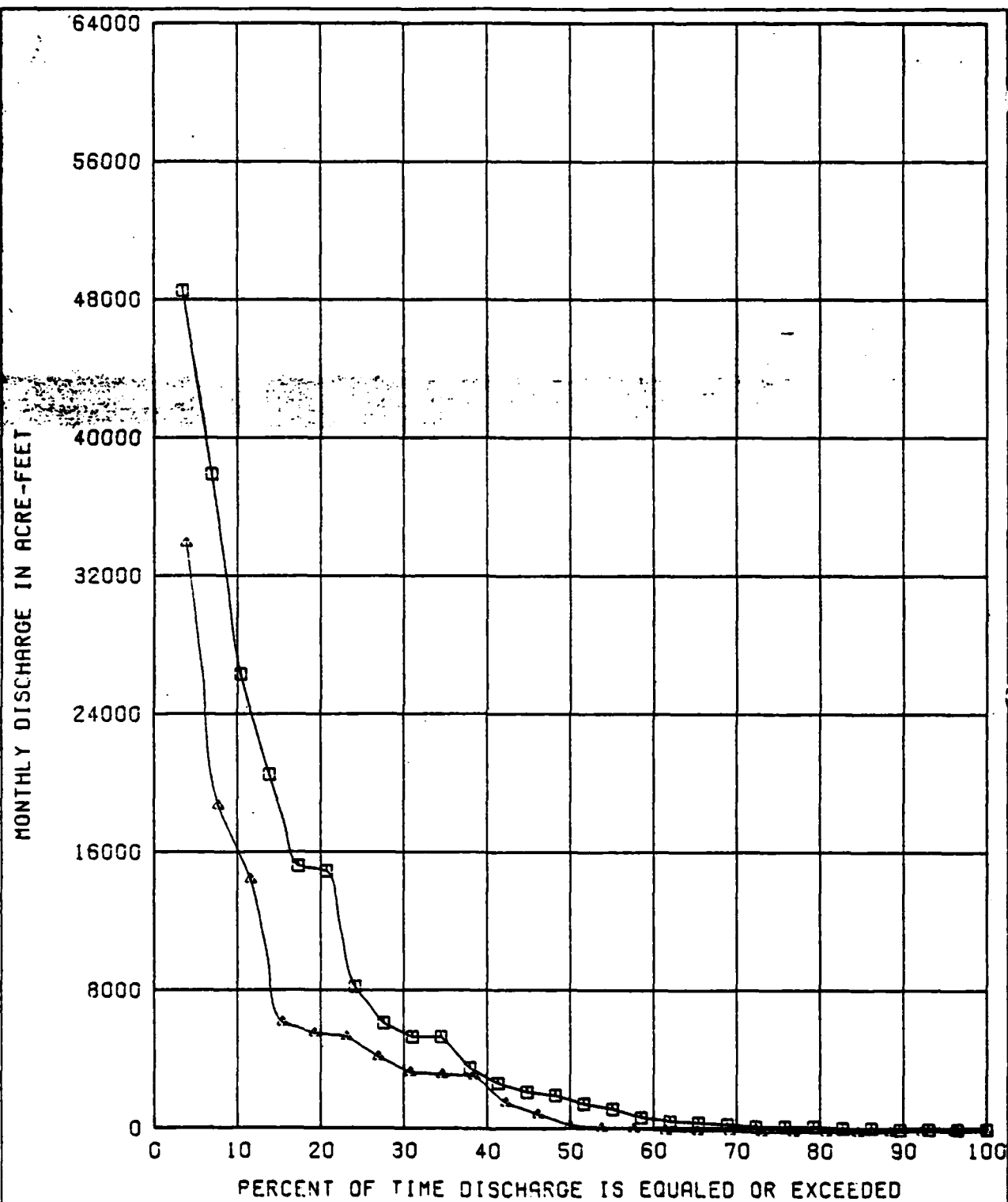
BENBROOK LAKE

FLOW DURATION CURVES AT DAM SITE

JANUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 13



LEGEND

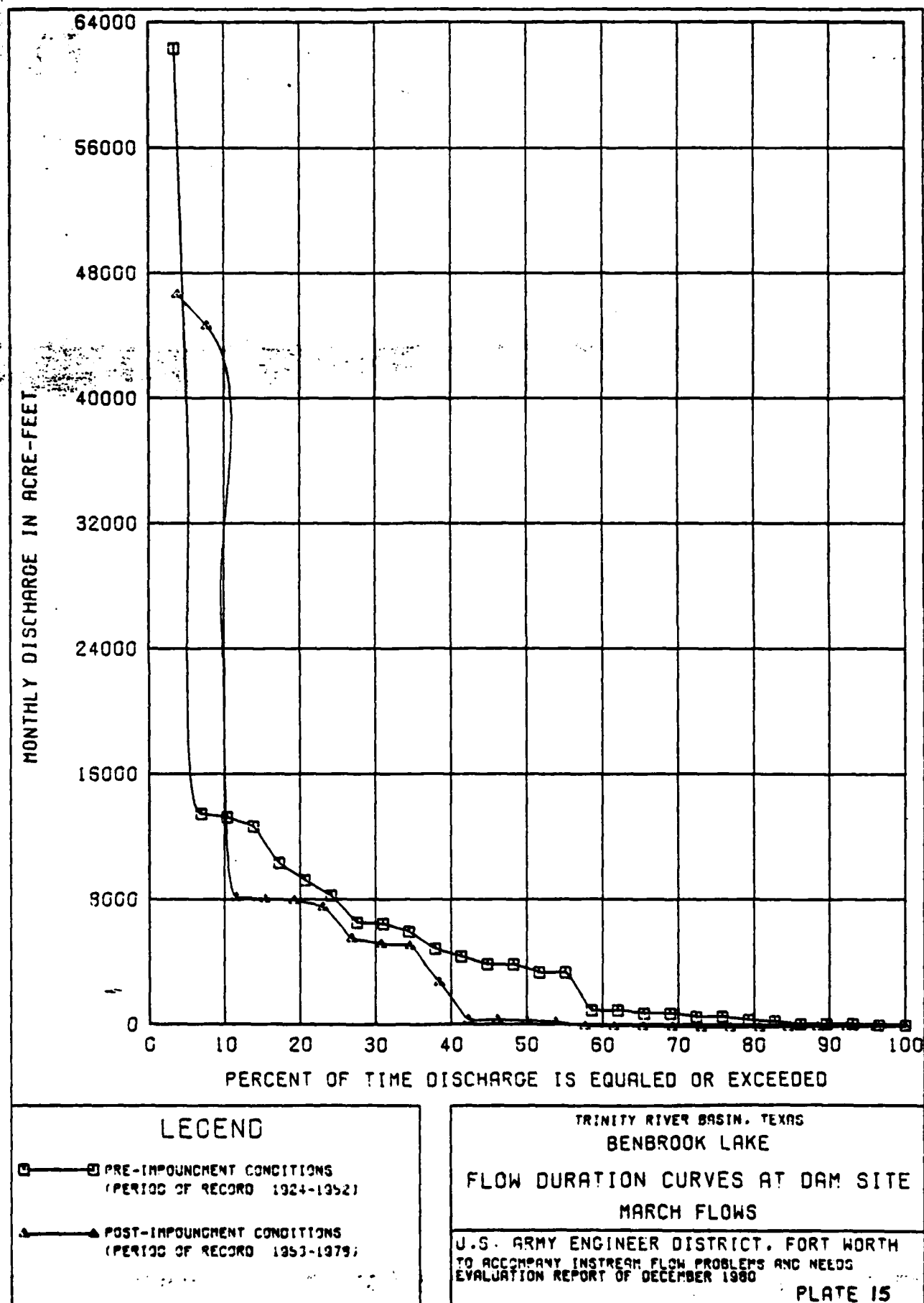
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(PERIOD OF RECORD 1924-1952)
- △ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

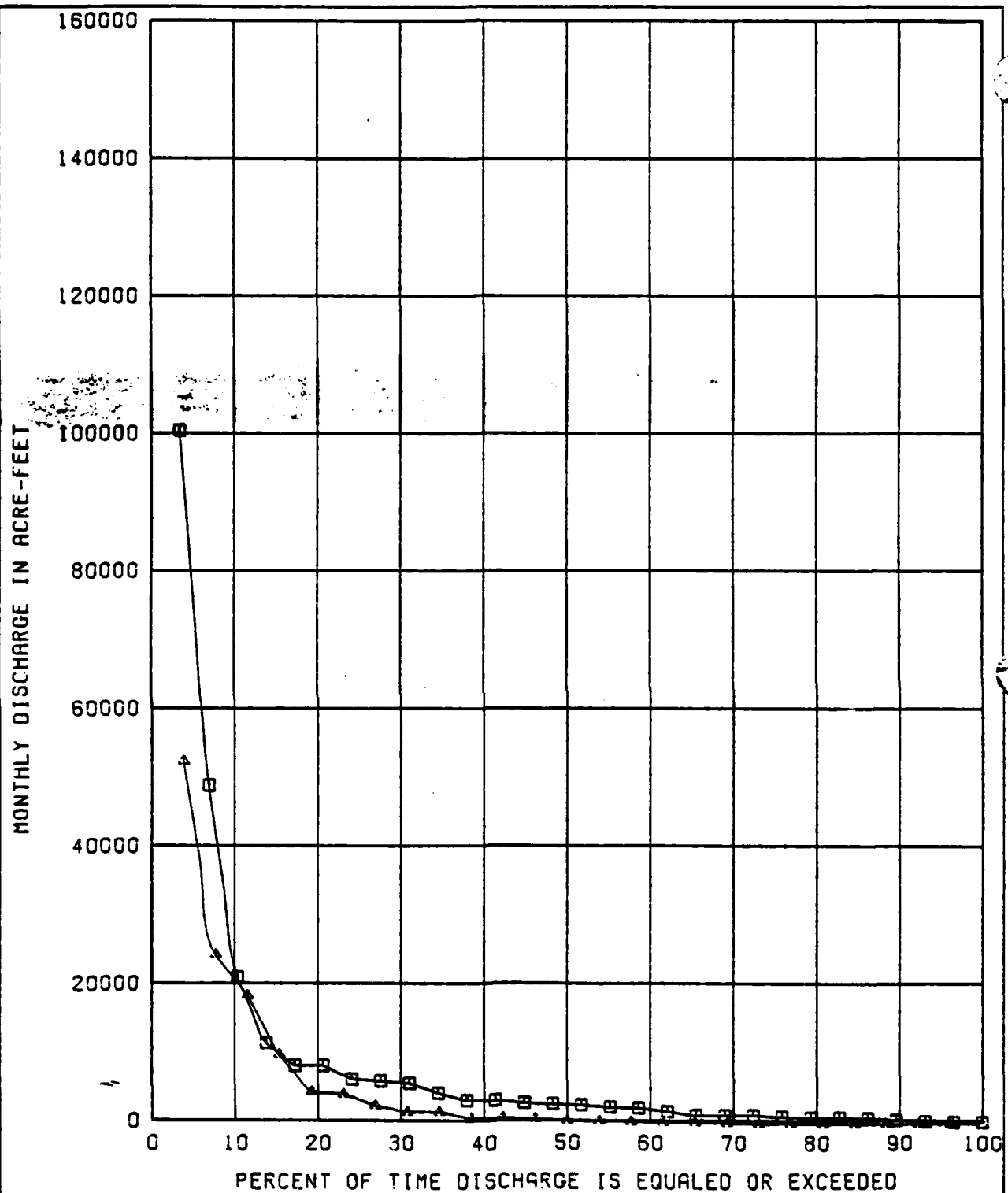
TRINITY RIVER BASIN, TEXAS
BENBROOK LAKE

FLOW DURATION CURVES AT DAM SITE
FEBRUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 14





LEGEND

- PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1952)
- △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

TRINITY RIVER BASIN, TEXAS

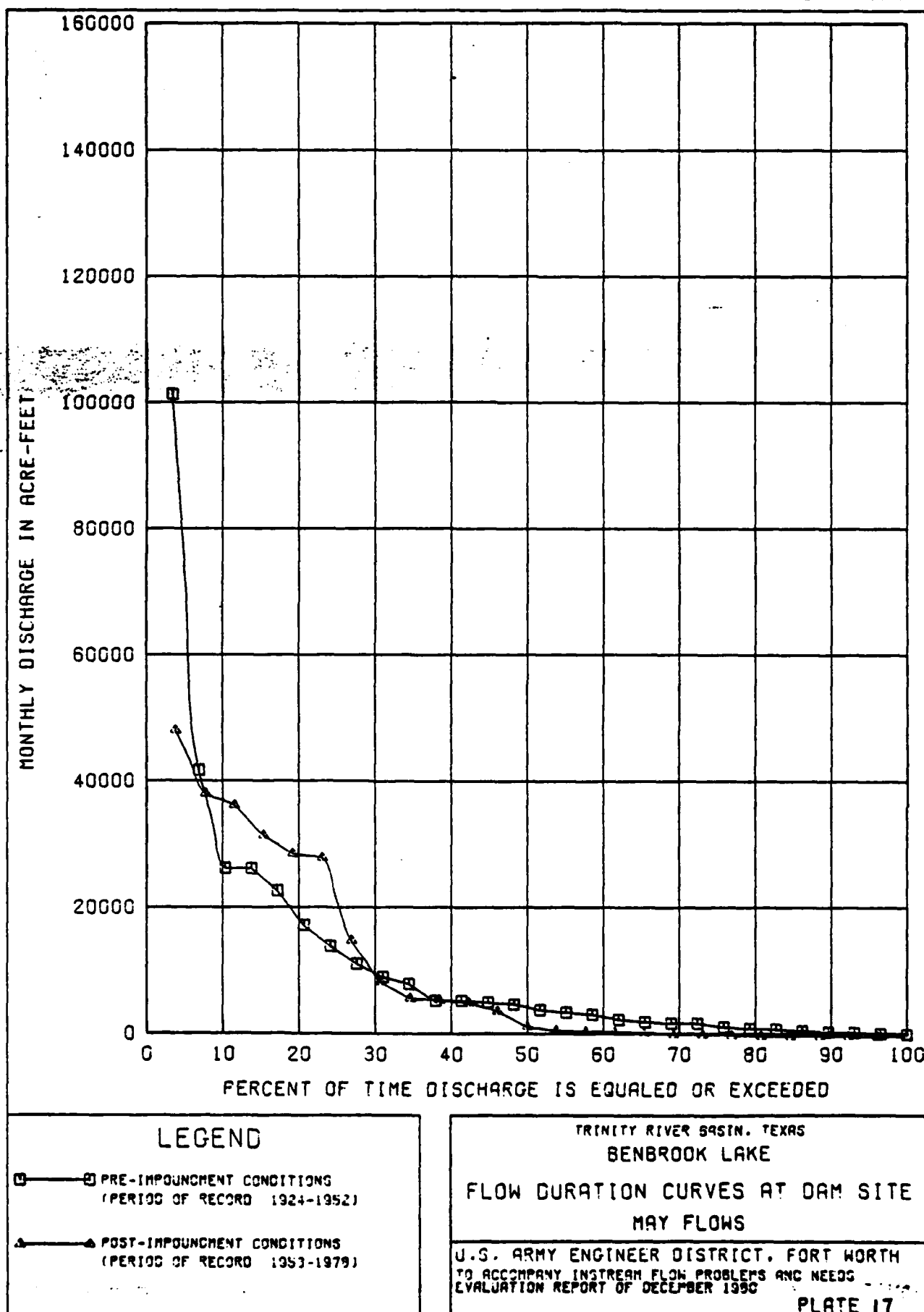
BENBROOK LAKE

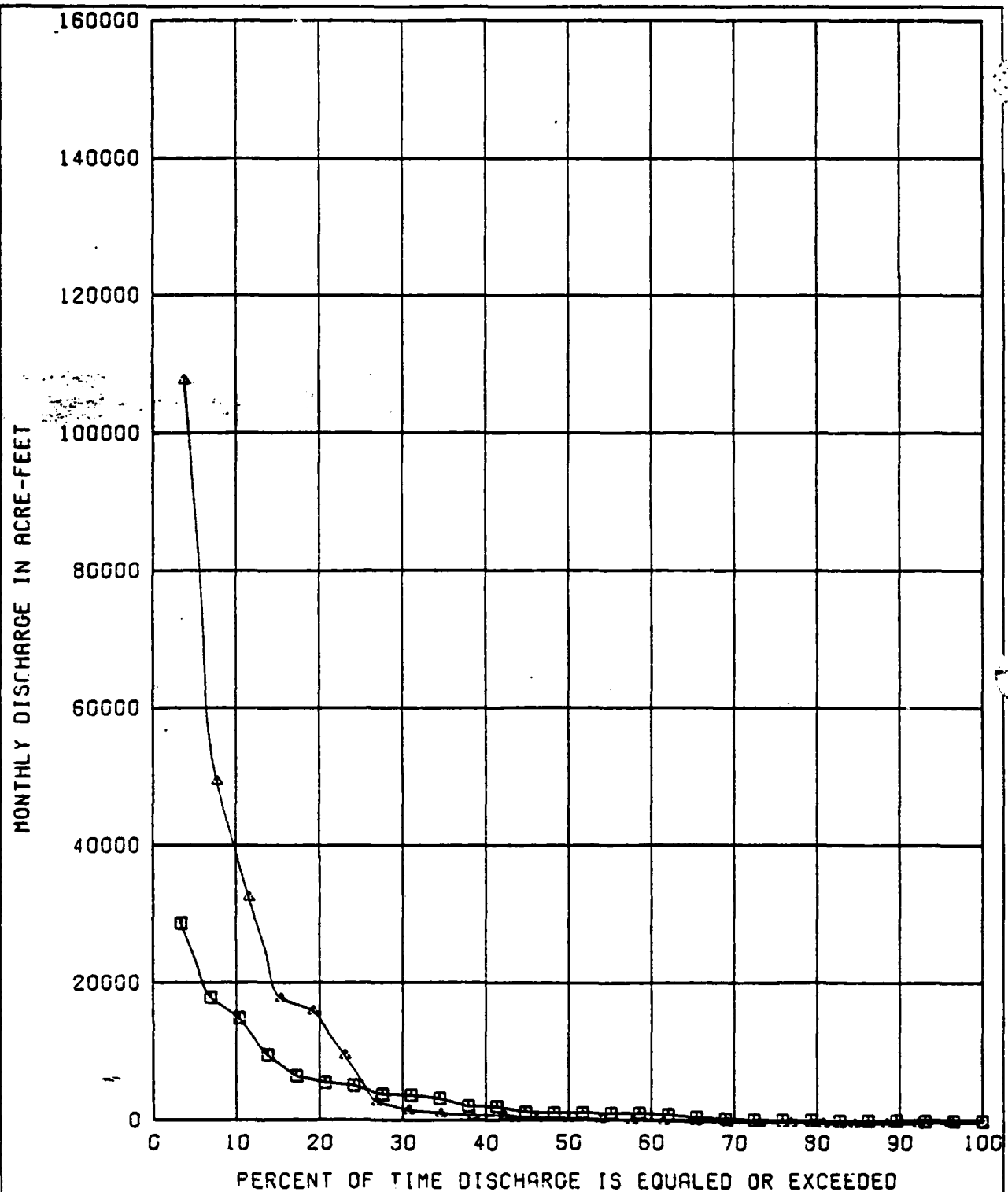
FLOW DURATION CURVES AT DAM SITE

APRIL FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 16





LEGEND

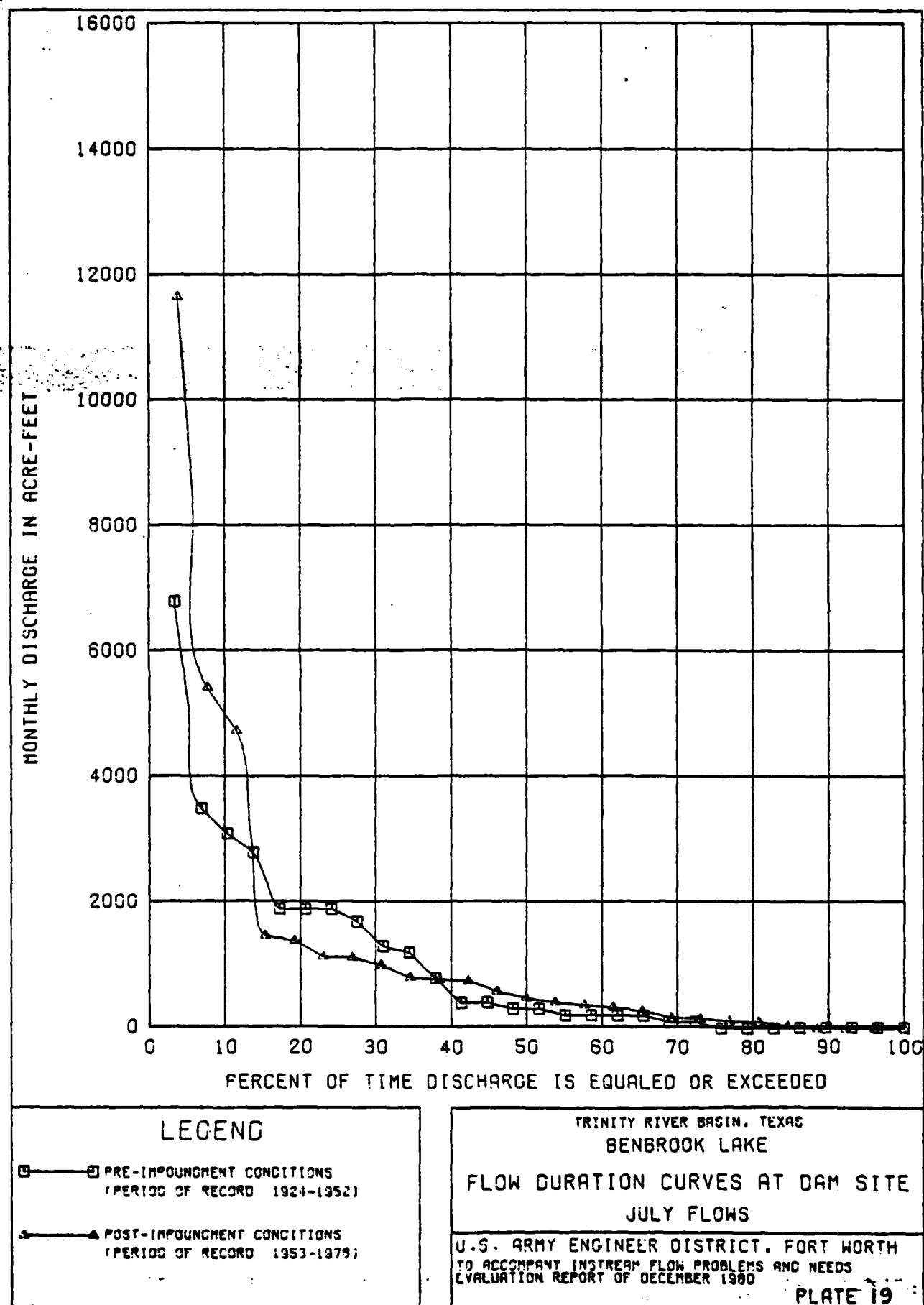
- — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1952)
- △ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

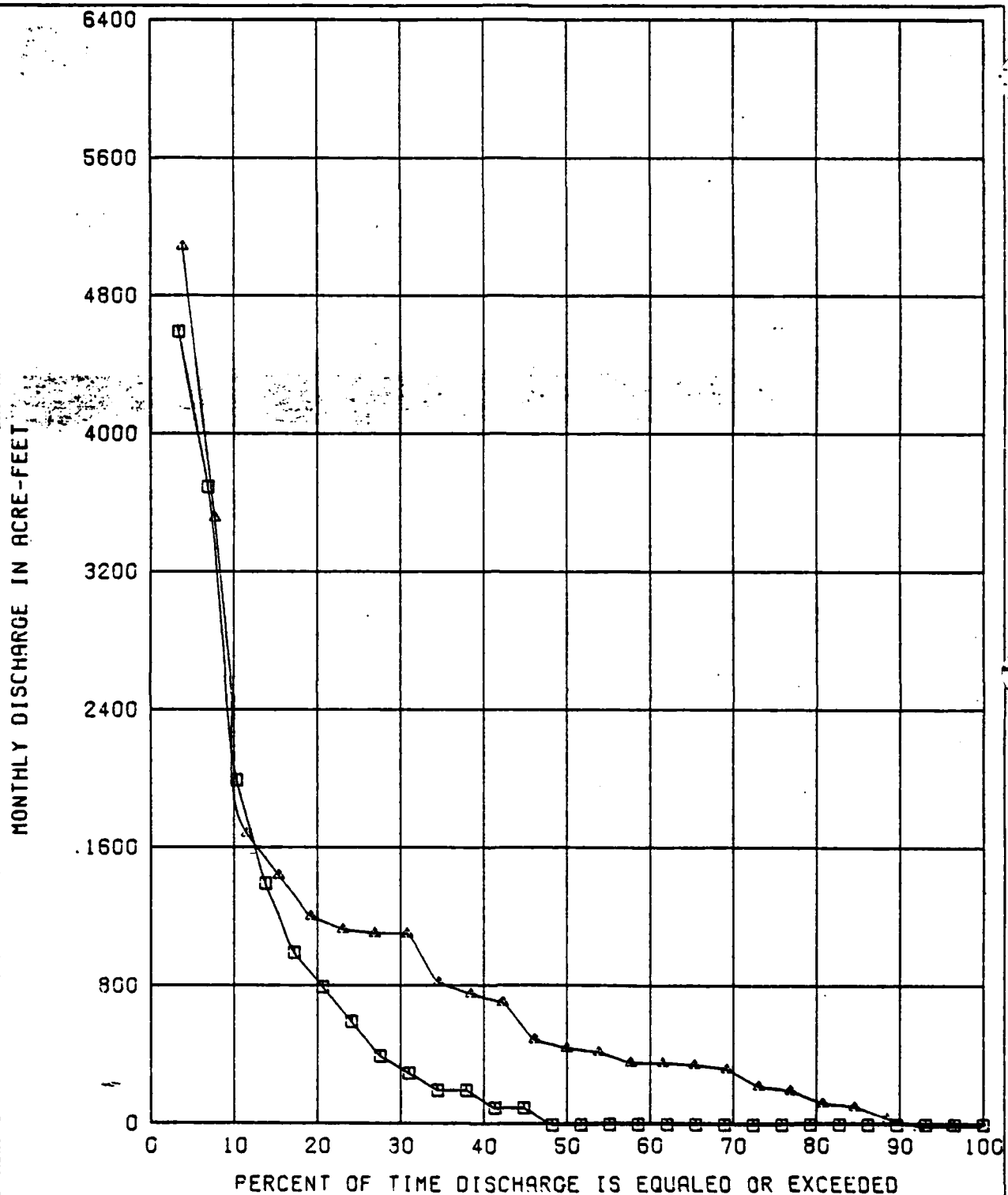
TRINITY RIVER BASIN, TEXAS
BENBROOK LAKE

FLOW DURATION CURVES AT DAM SITE
JUNE FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 18





LEGEND

□ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1952)

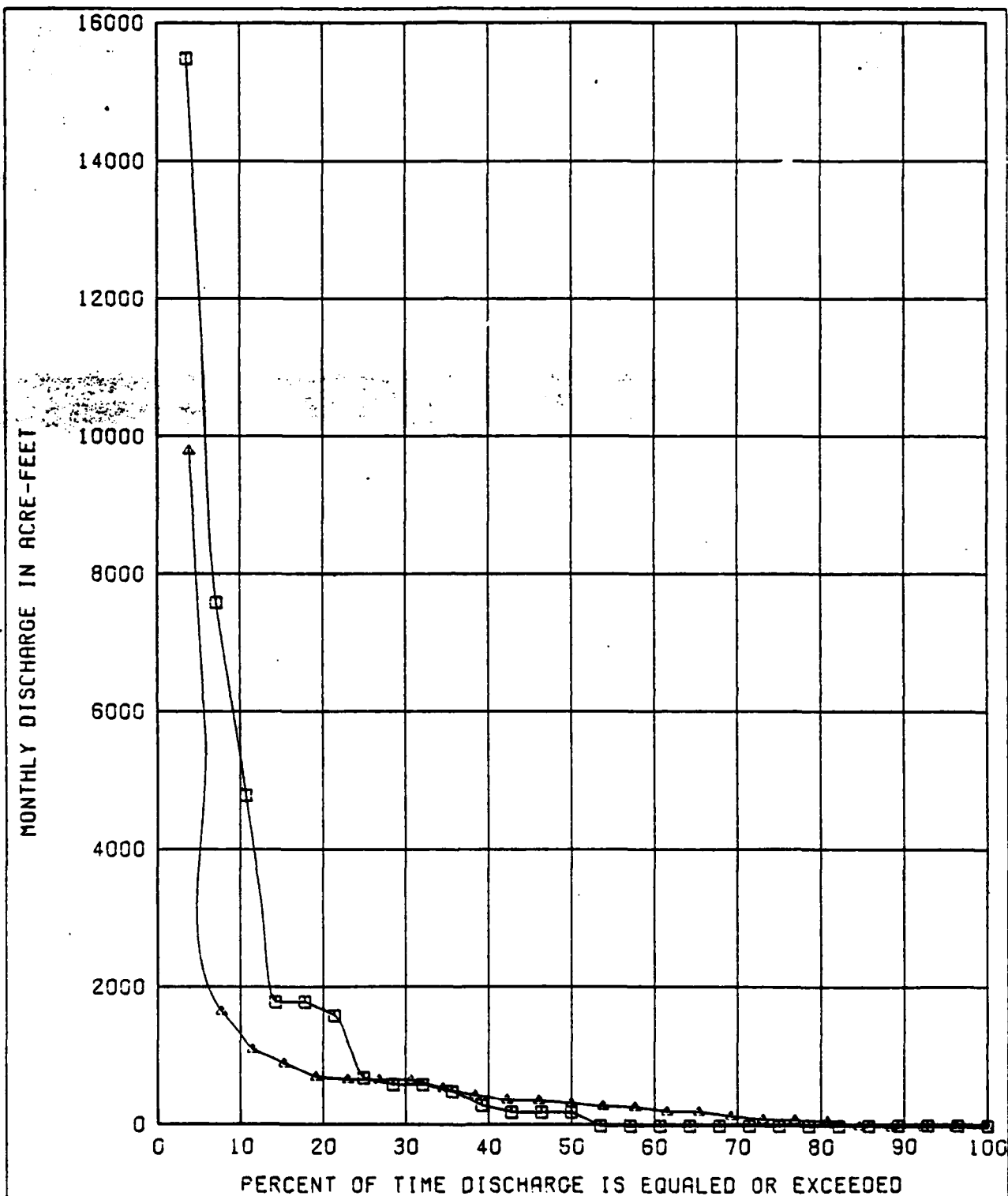
△ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

TRINITY RIVER BASIN, TEXAS
BENBROOK LAKE

FLOW DURATION CURVES AT DAM SITE
AUGUST FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 20



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1952)

▲ — ▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

TRINITY RIVER BASIN, TEXAS

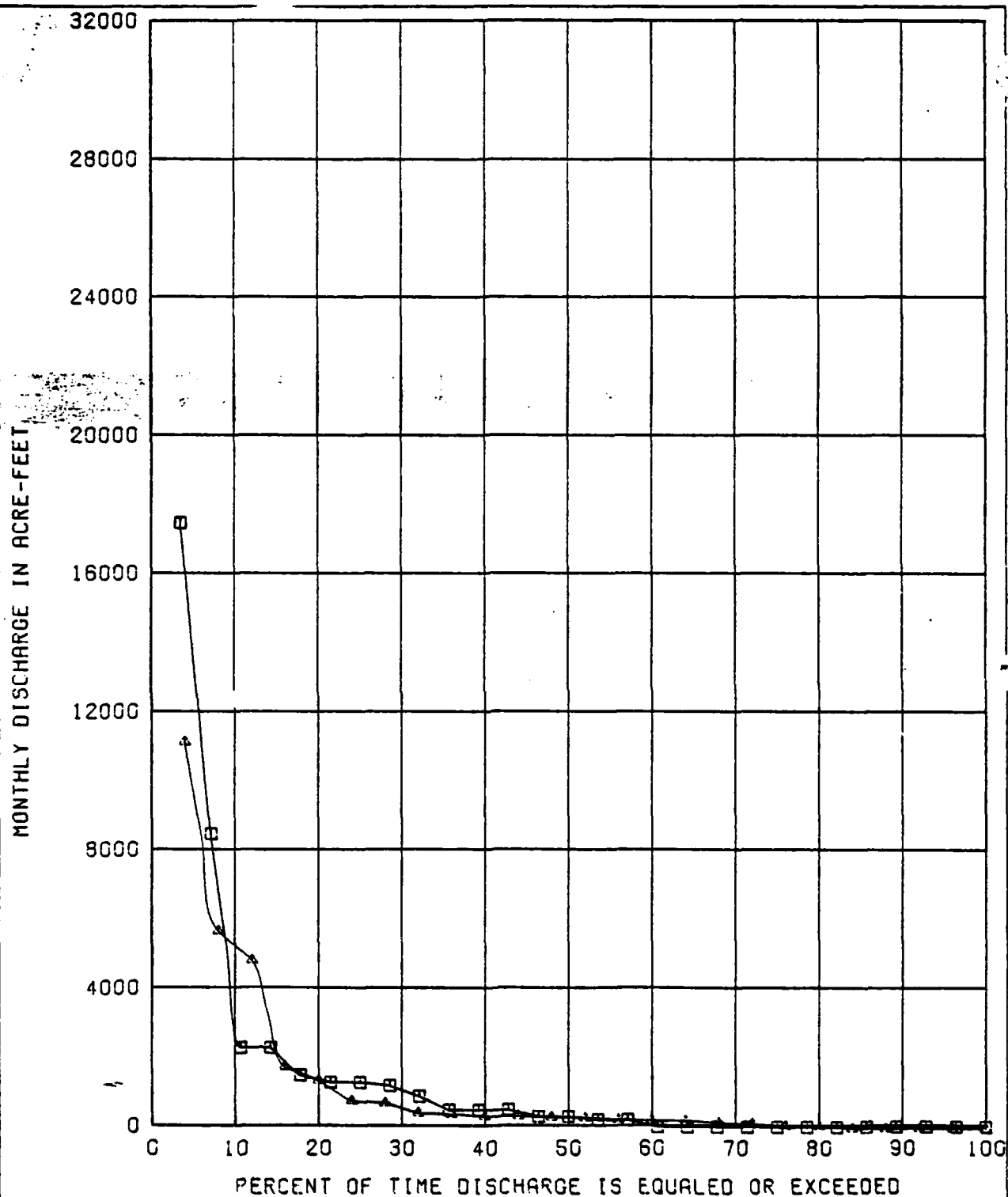
BENBROOK LAKE

FLOW DURATION CURVES AT DAM SITE

SEPTEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

- PLATE 21



LEGEND

□ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1952)

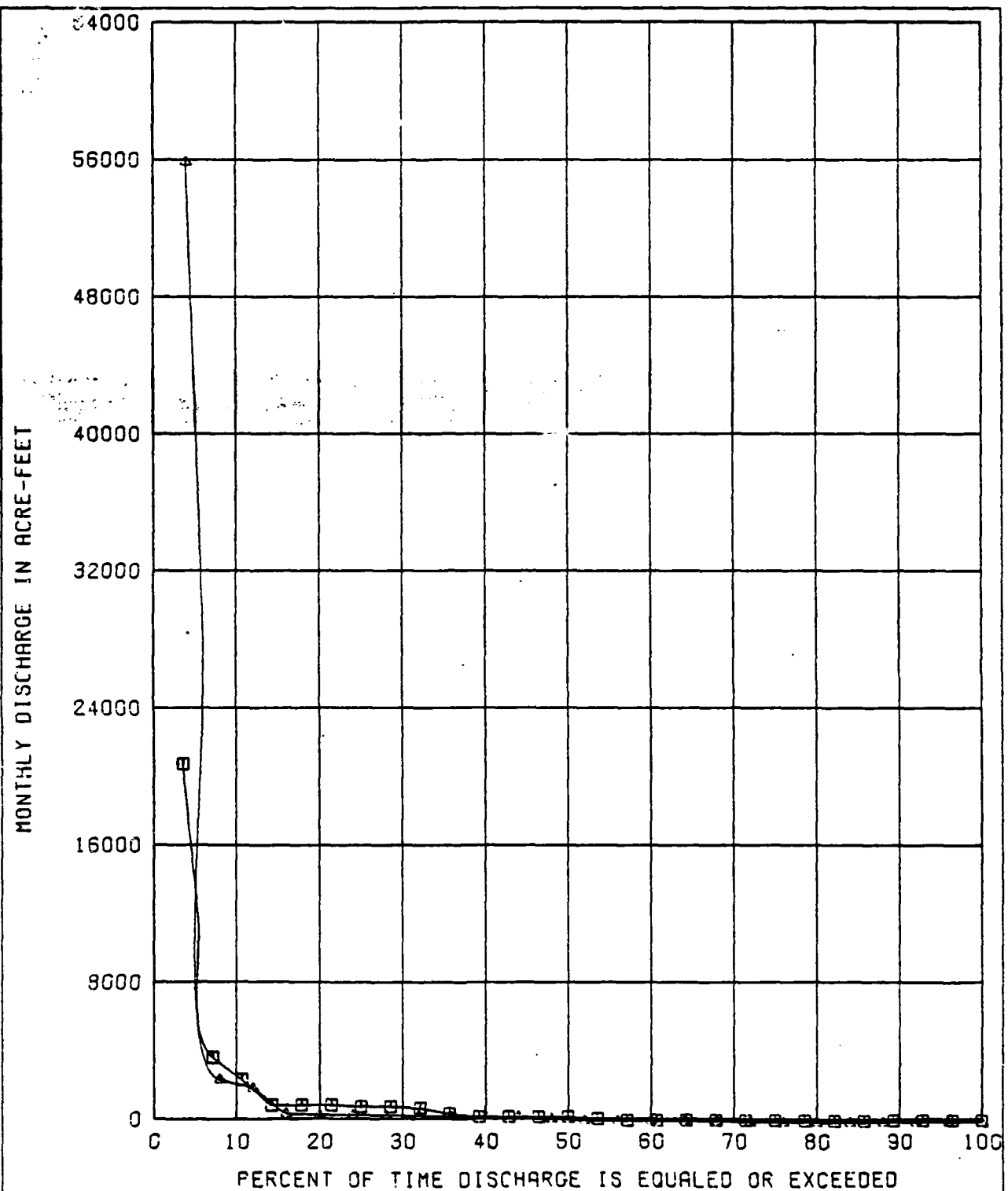
△ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

TRINITY RIVER BASIN, TEXAS
BENBROOK LAKE

FLOW DURATION CURVES AT DAM SITE
OCTOBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 22



LEGEND

- — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1952)
- ▲ — ▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

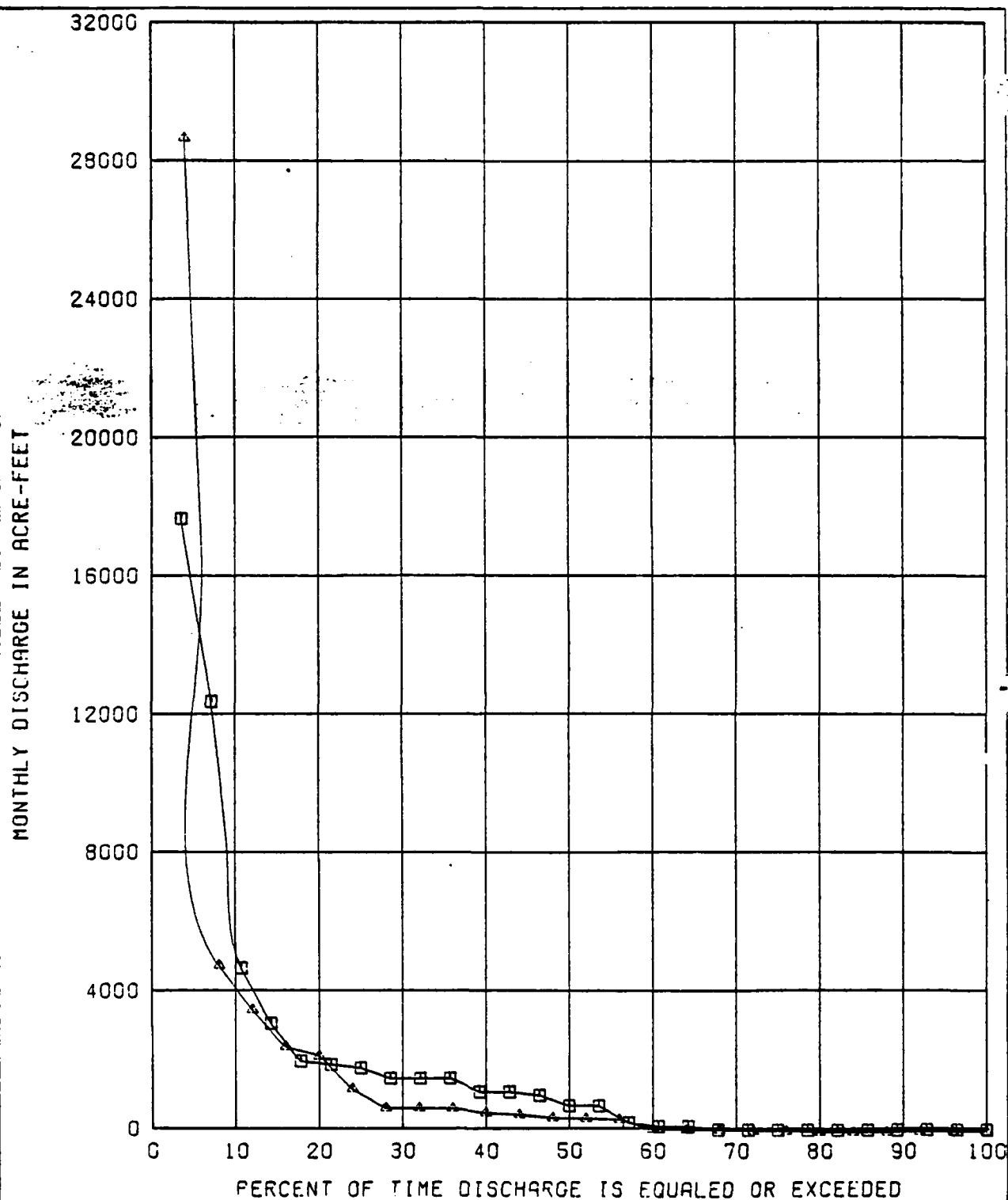
TRINITY RIVER BASIN, TEXAS

BENBROOK LAKE

FLOW DURATION CURVES AT DAM SITE
NOVEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980.

PLATE 23



LEGEND

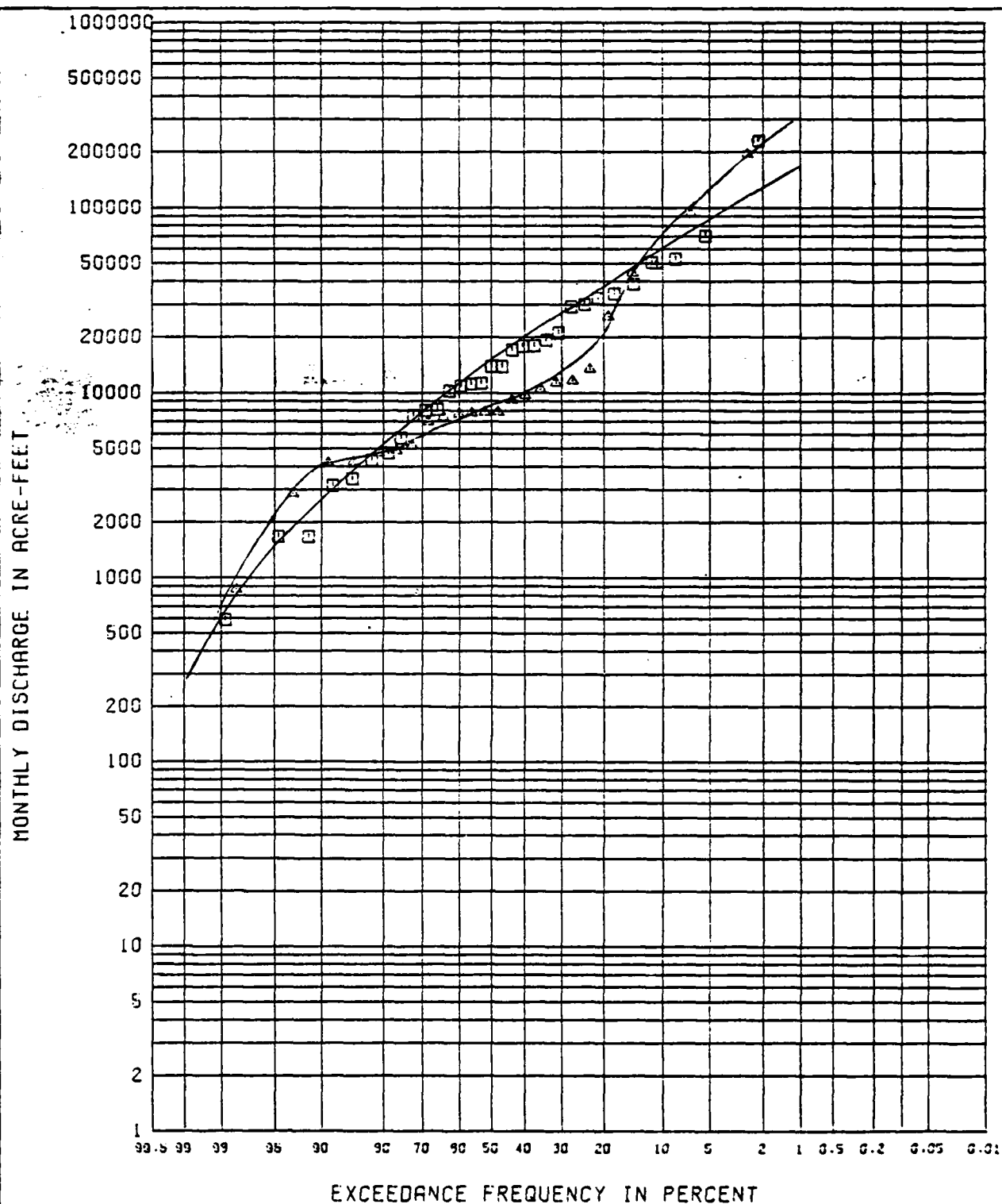
- PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1952)
- △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

TRINITY RIVER BASIN, TEXAS
BENBROOK LAKE

FLOW DURATION CURVES AT DAM SITE
DECEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 24



LEGEND

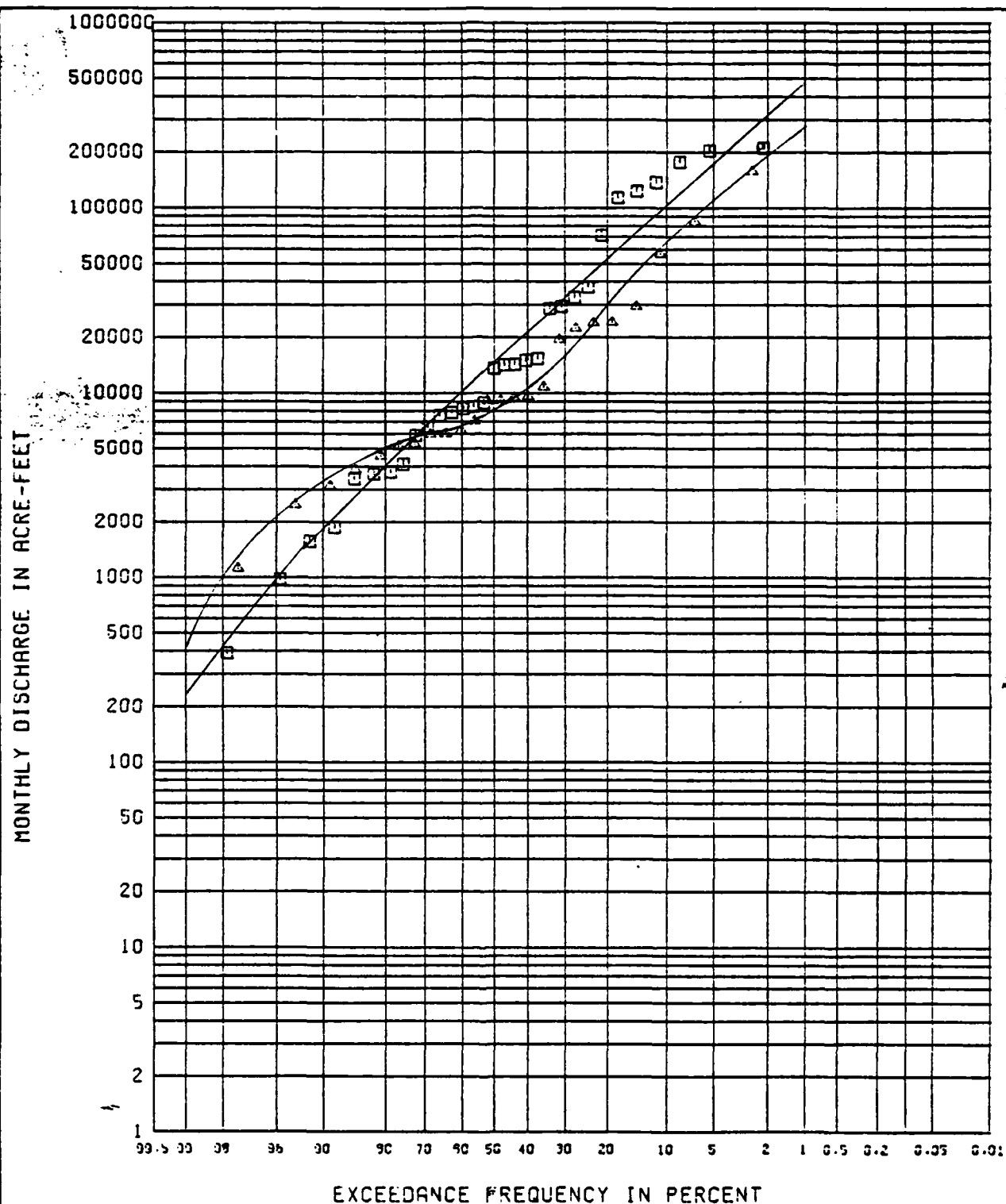
—■— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1954)

- - -▲- - POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1955-1979)

TRINITY RIVER BASIN, TEXAS
LEWISVILLE LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
JANUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 1



LEGEND

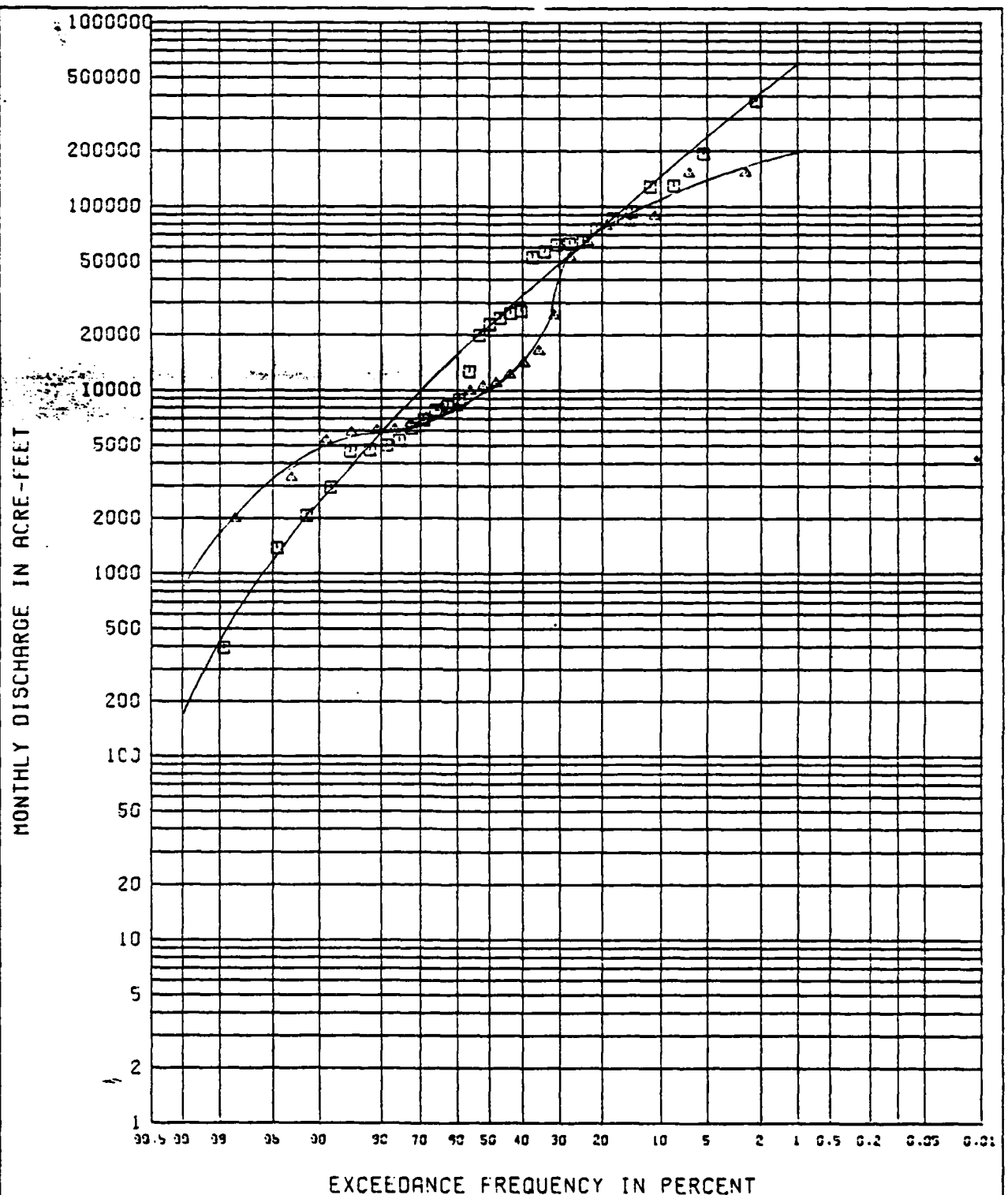
□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1954)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1955-1979)

TRINITY RIVER BASIN, TEXAS
LEWISVILLE LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
FEBRUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 2



LEGEND

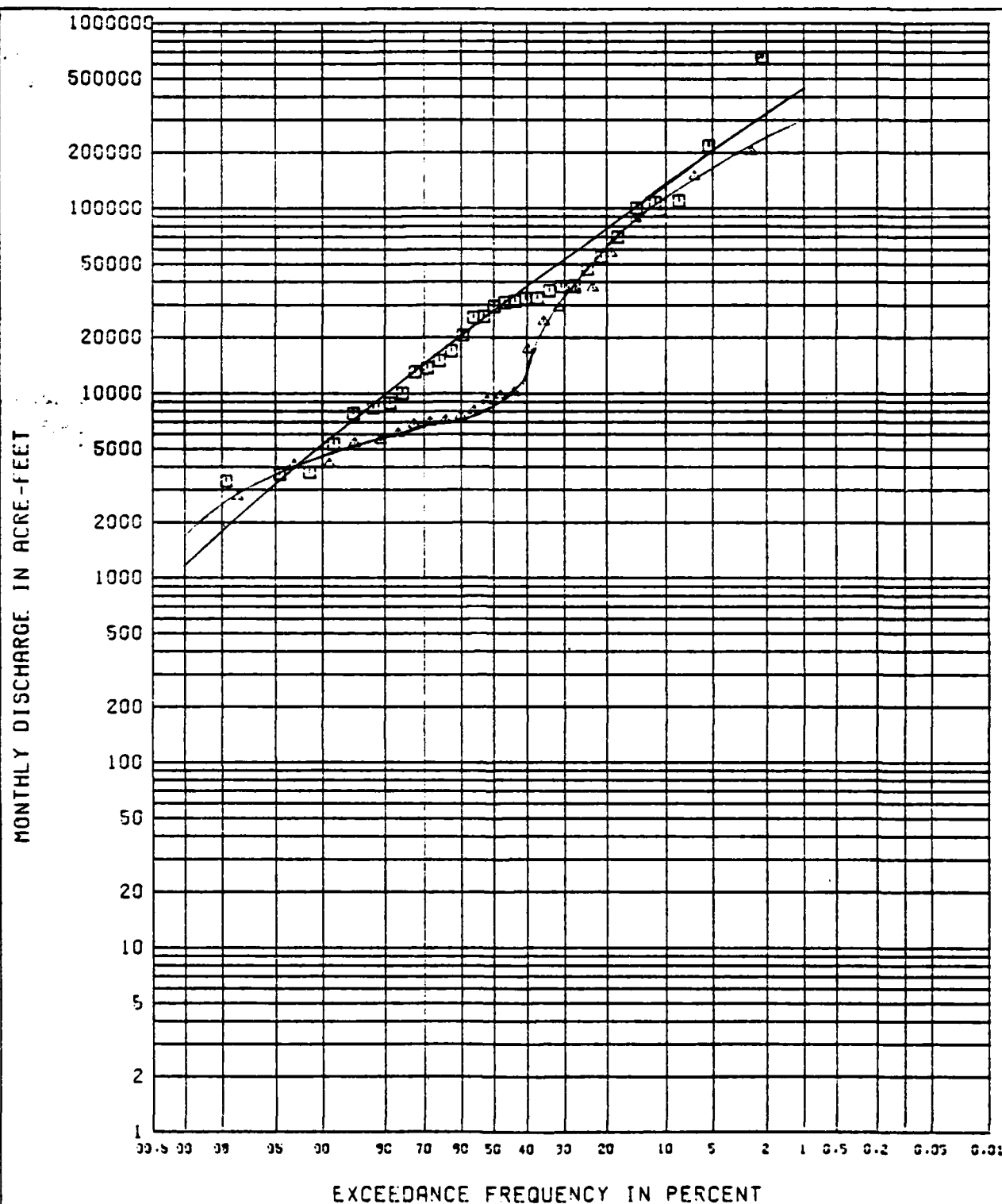
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(PERIOD OF RECORD 1924-1954)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1955-1979)

TRINITY RIVER BASIN, TEXAS
LEWISVILLE LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
MARCH FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 4



LEGEND

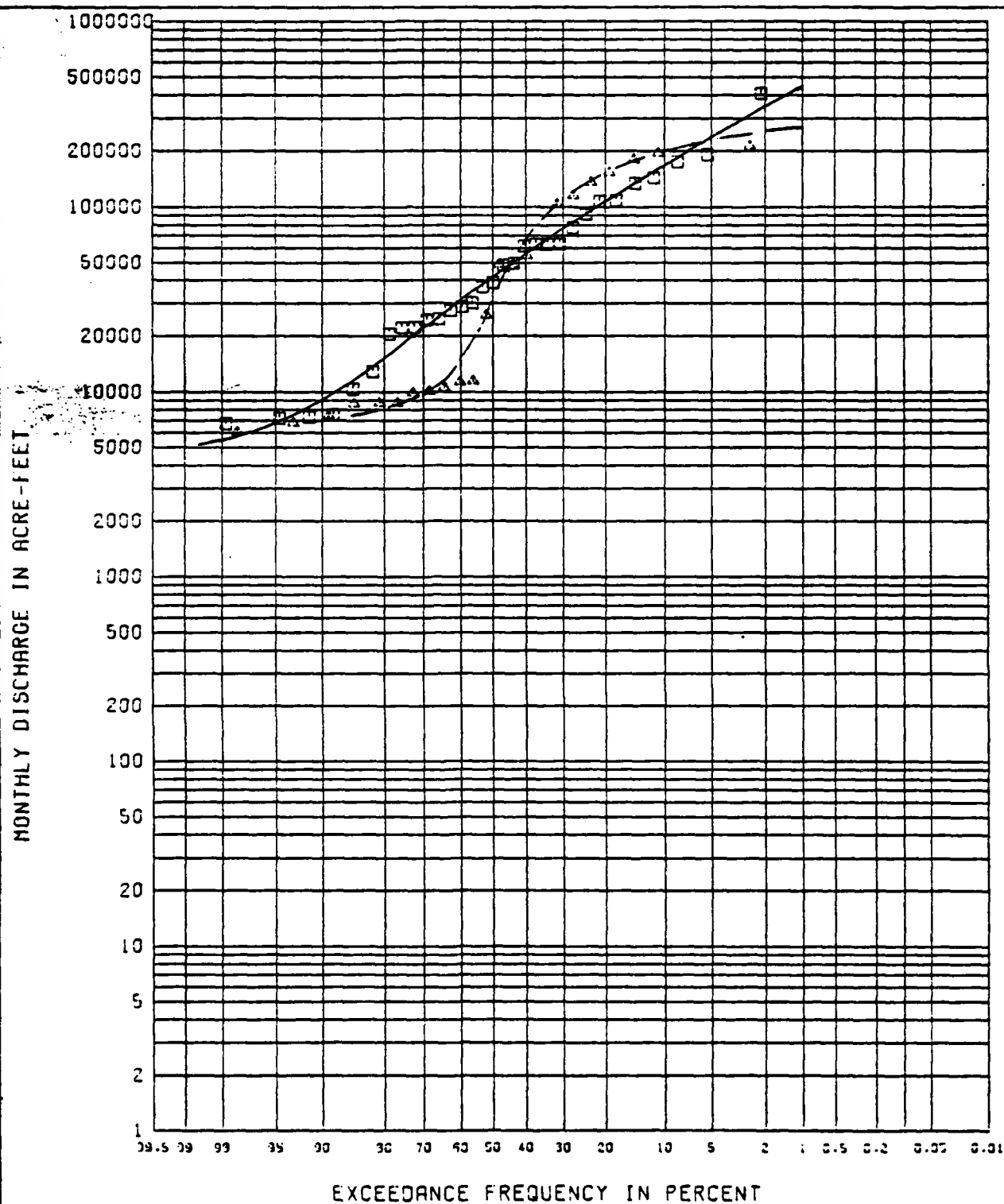
□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1954)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1955-1979)

TRINITY RIVER BASIN, TEXAS
LEWISVILLE LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
APRIL FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 5



LEGEND

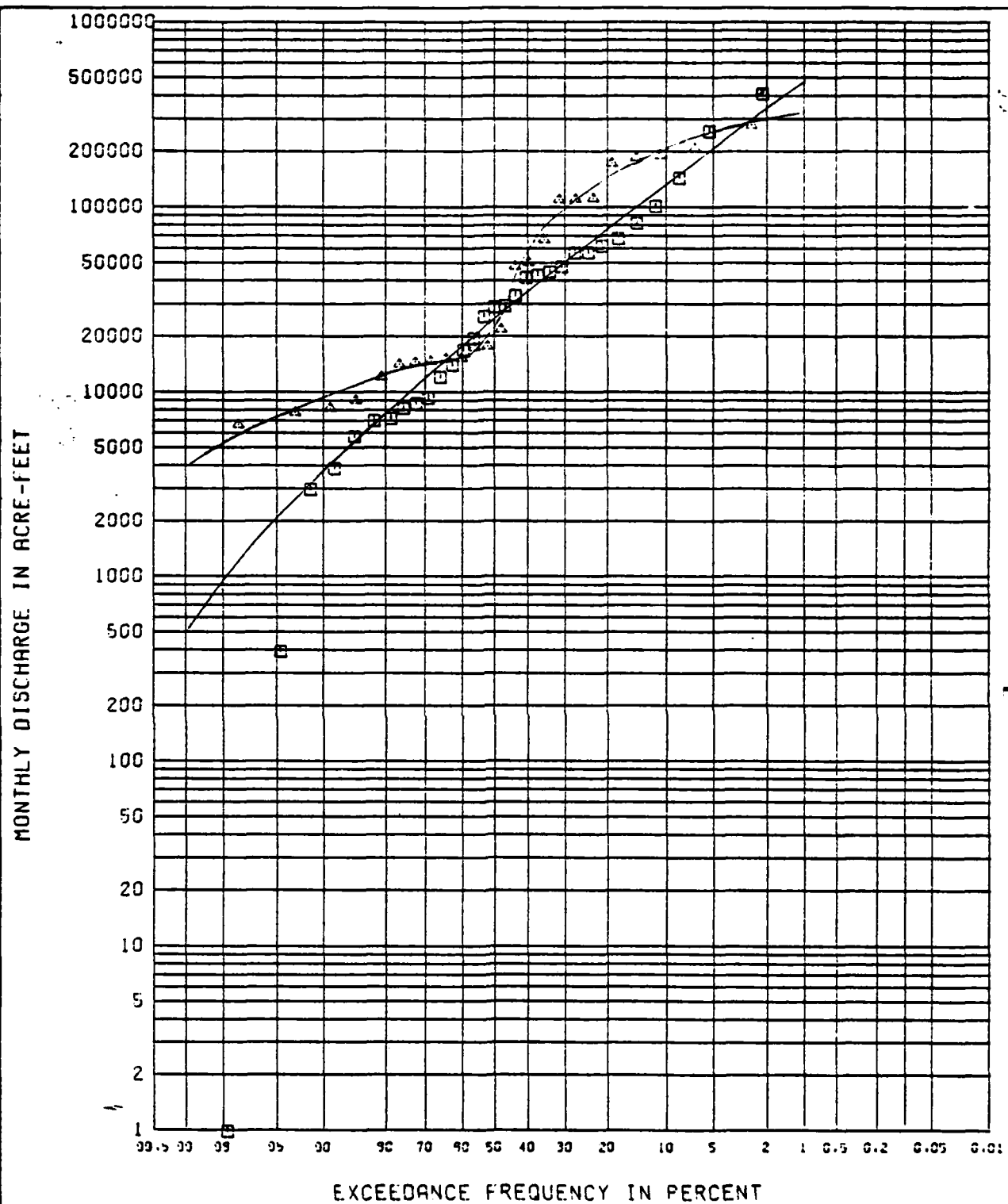
— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1954)

— POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1955-1979)

TRINITY RIVER BASIN, TEXAS
LEWISVILLE LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
MAY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 6



LEGEND

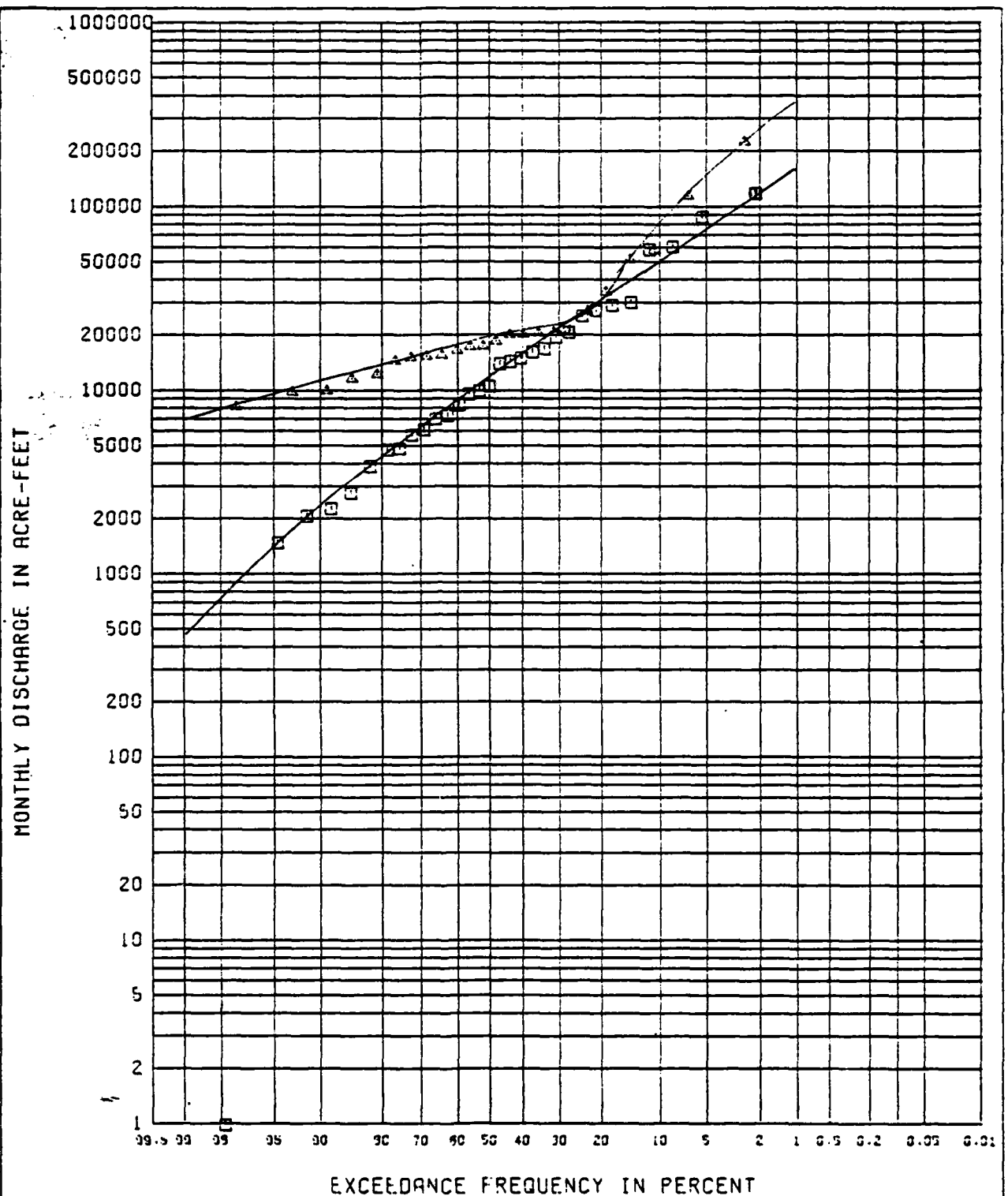
□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1954)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1955-1979)

TRINITY RIVER BASIN, TEXAS
LEWISVILLE LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
JUNE FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 7



LEGEND

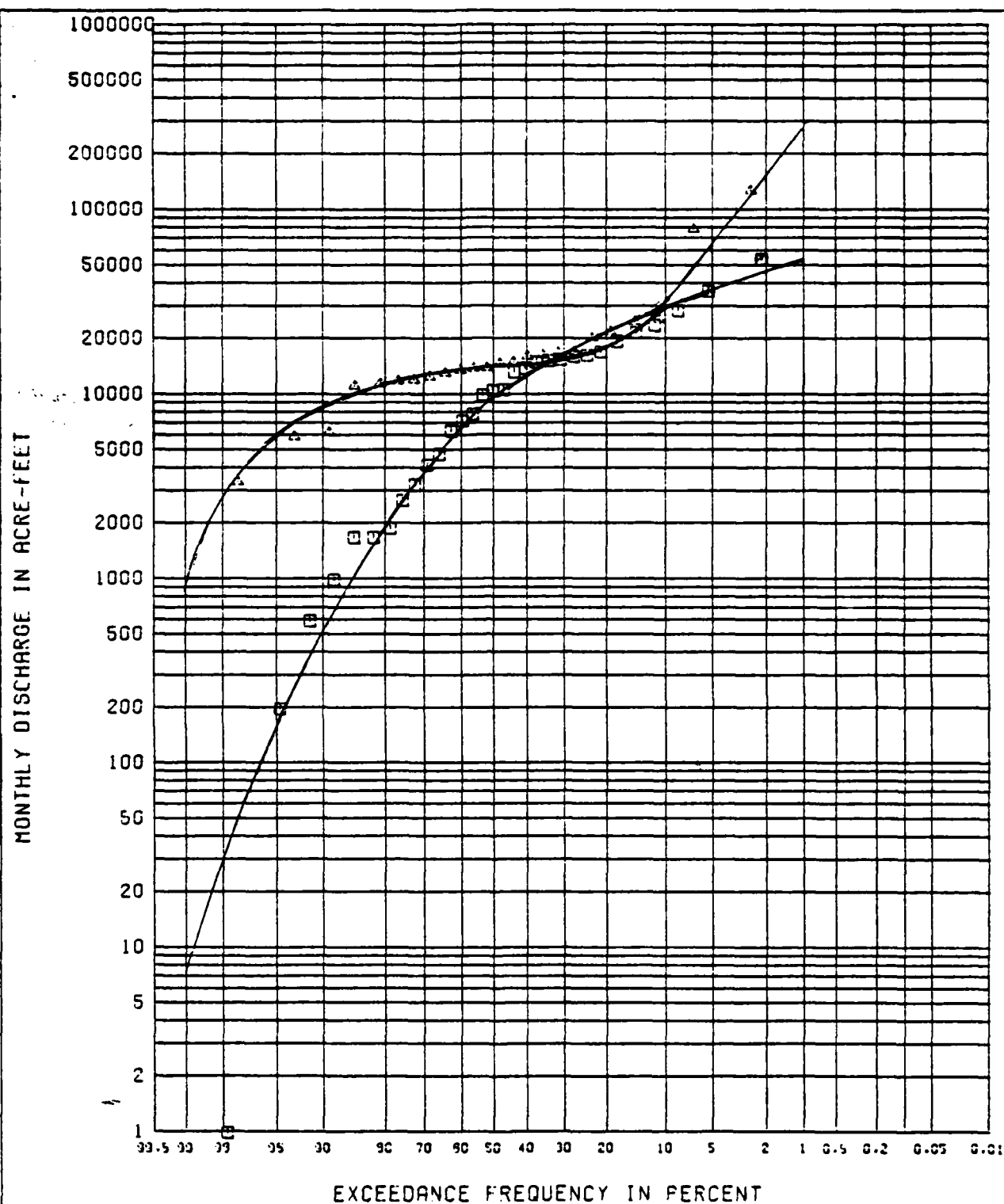
□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1954)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1955-1979)

TRINITY RIVER BASIN, TEXAS
LEWISVILLE LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
JULY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 8



LEGEND

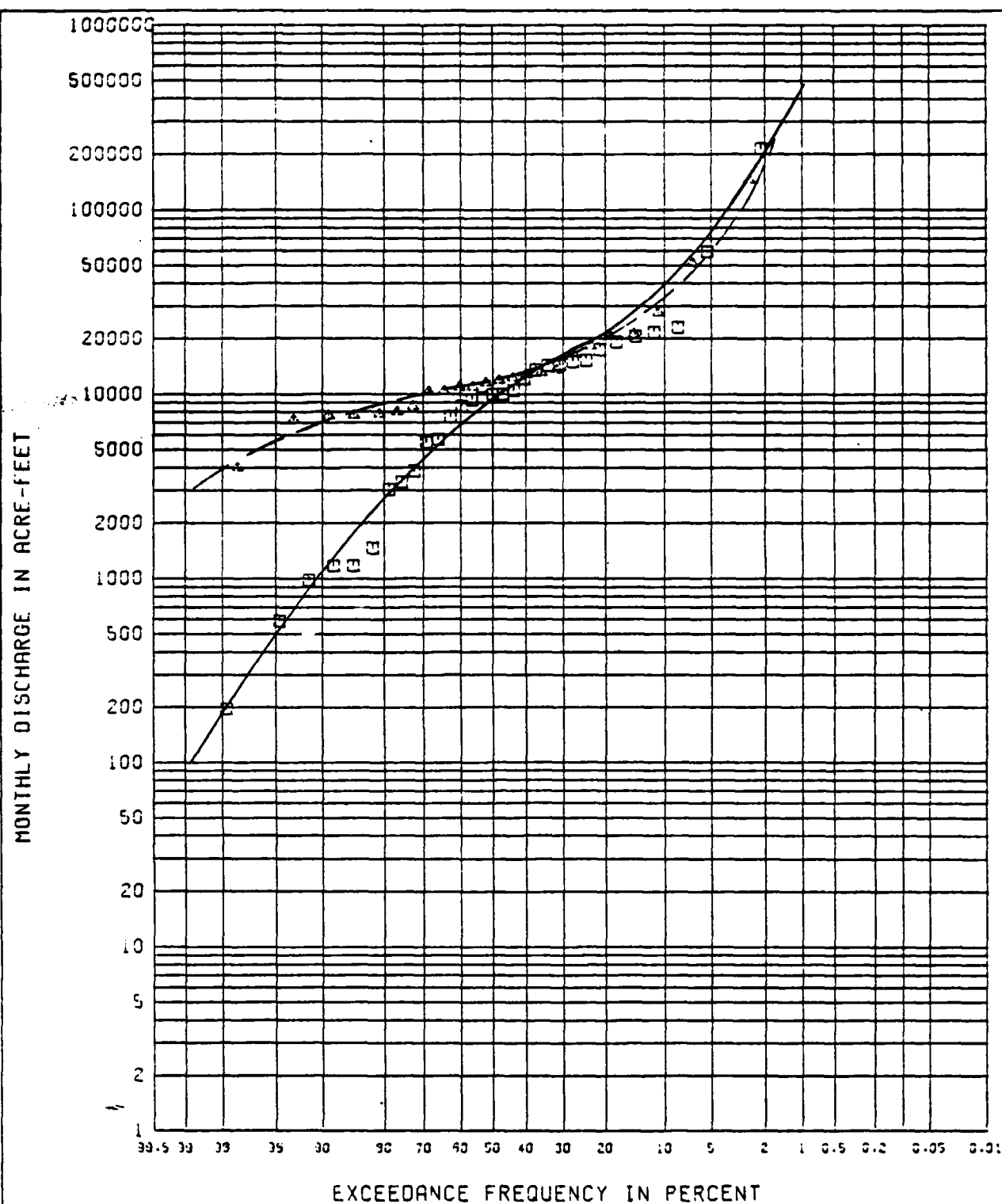
— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1954)

- - - POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1955-1979)

TRINITY RIVER BASIN, TEXAS
LEWISVILLE LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
AUGUST FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 8



LEGEND

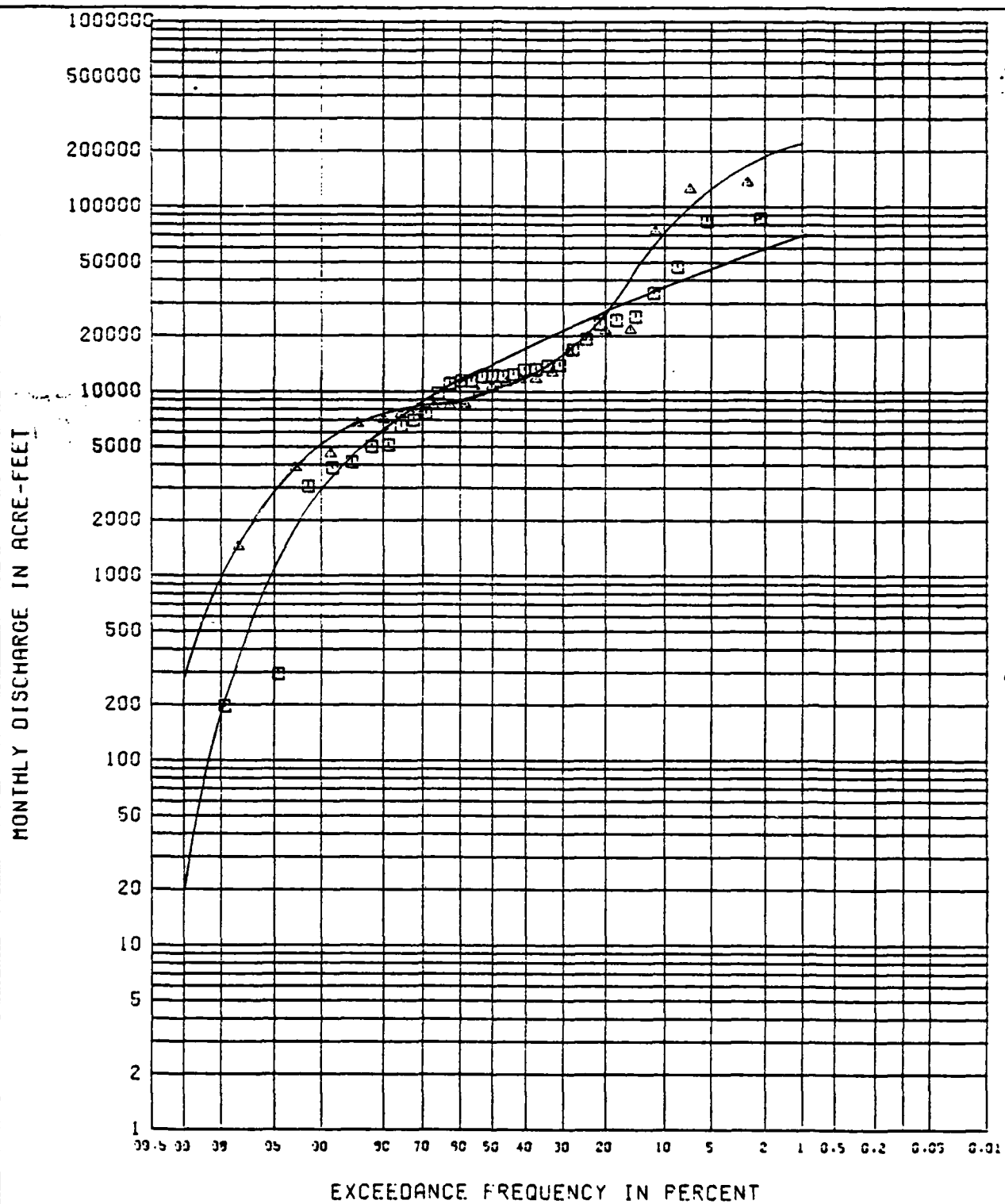
— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1954)

— POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1955-1979)

TRINITY RIVER BASIN, TEXAS
LEWISVILLE LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
SEPTEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 9



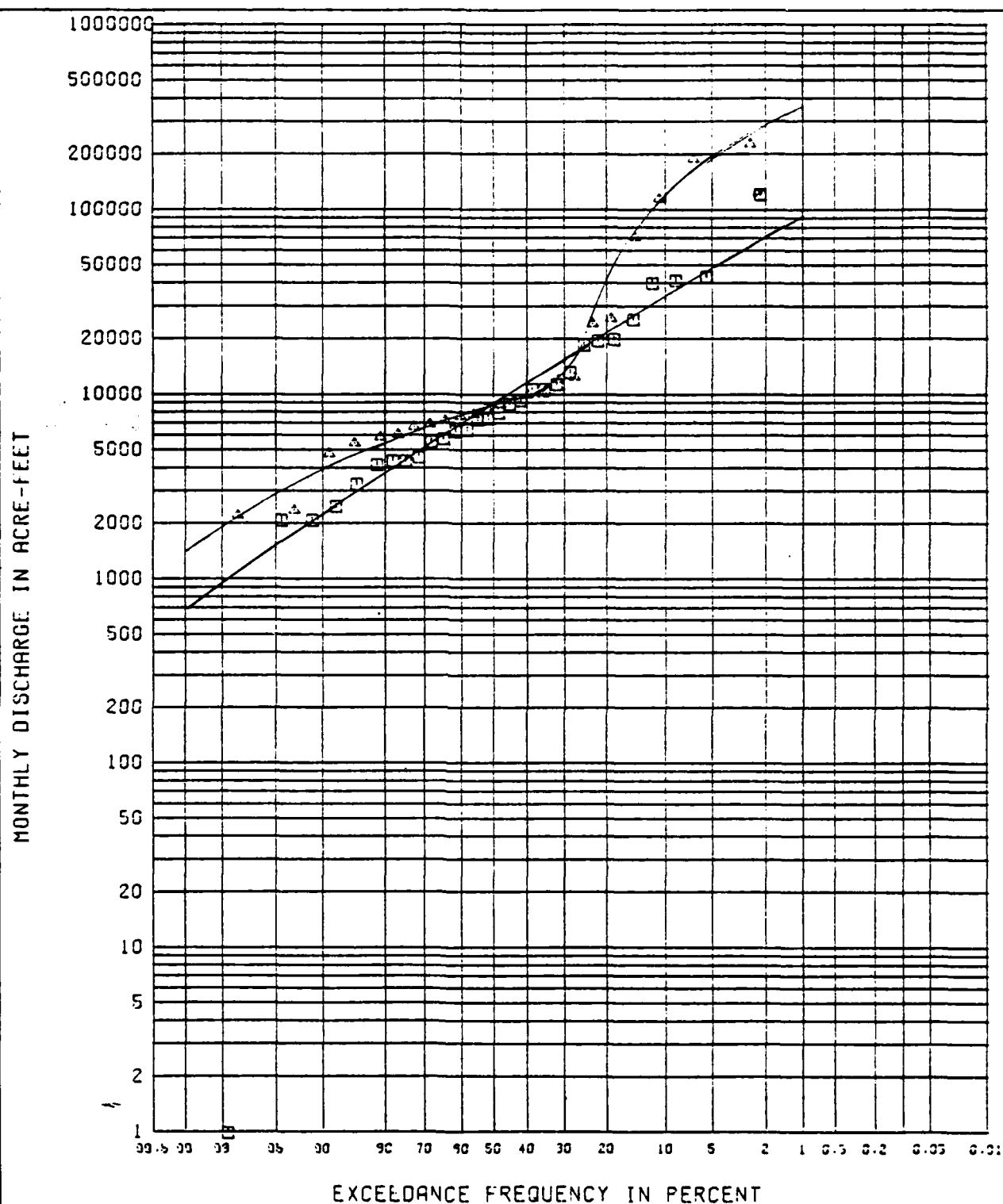
LEGEND

- — □ PRE-IMPOUNDMENT CONDITIONS
 (PERIOD OF RECORD 1924-1954)
- ▲ — ▲ POST-IMPOUNDMENT CONDITIONS
 (PERIOD OF RECORD 1955-1979)

TRINITY RIVER BASIN, TEXAS
 LEWISVILLE LAKE
 DISCHARGE-FREQUENCY RELATIONS
 AT DAM SITE
 OCTOBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
 TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
 EVALUATION REPORT OF DECEMBER 1980

PLATE 10



LEGEND

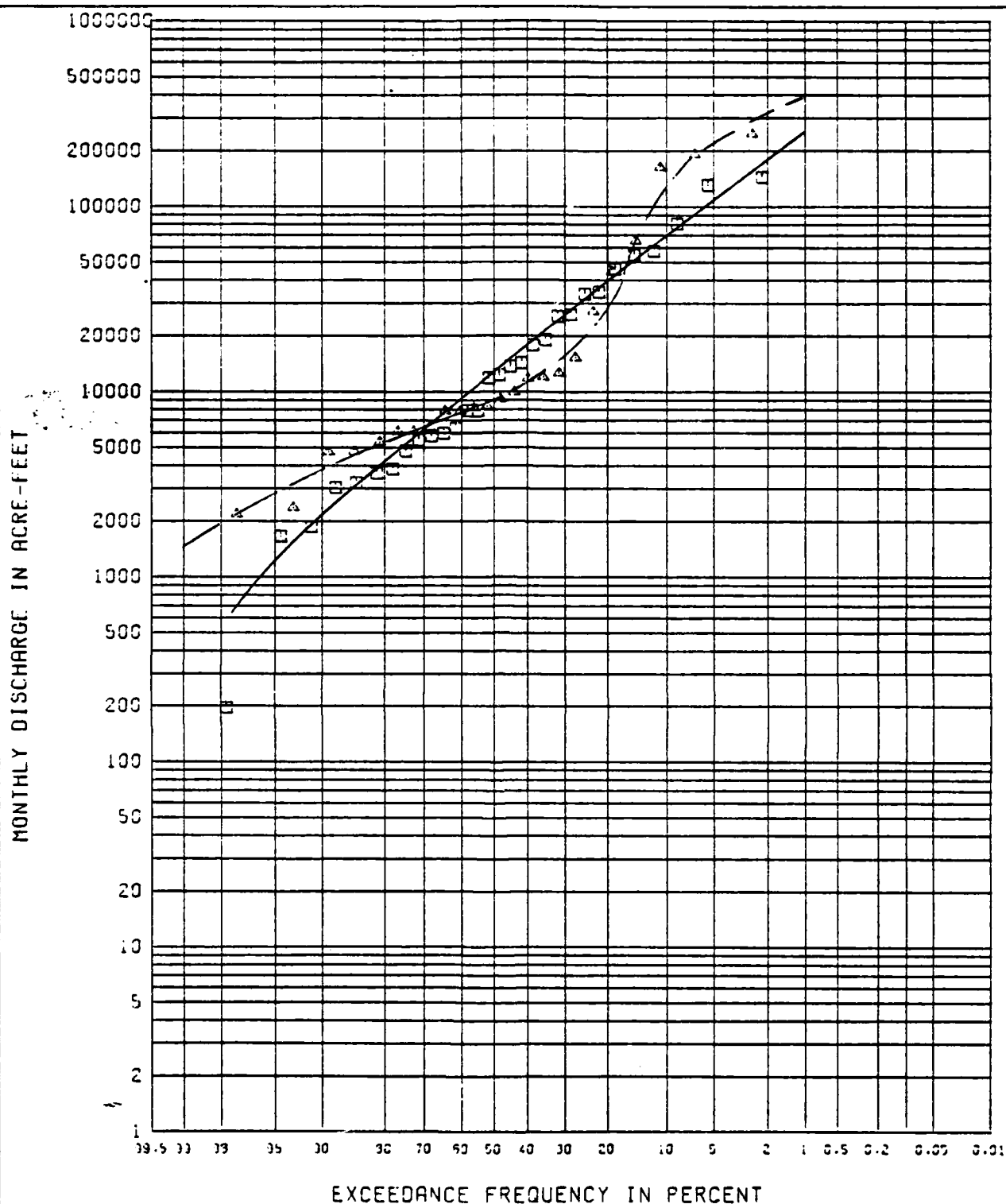
□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1954)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1955-1979)

TRINITY RIVER BASIN, TEXAS
LEWISVILLE LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
NOVEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE II

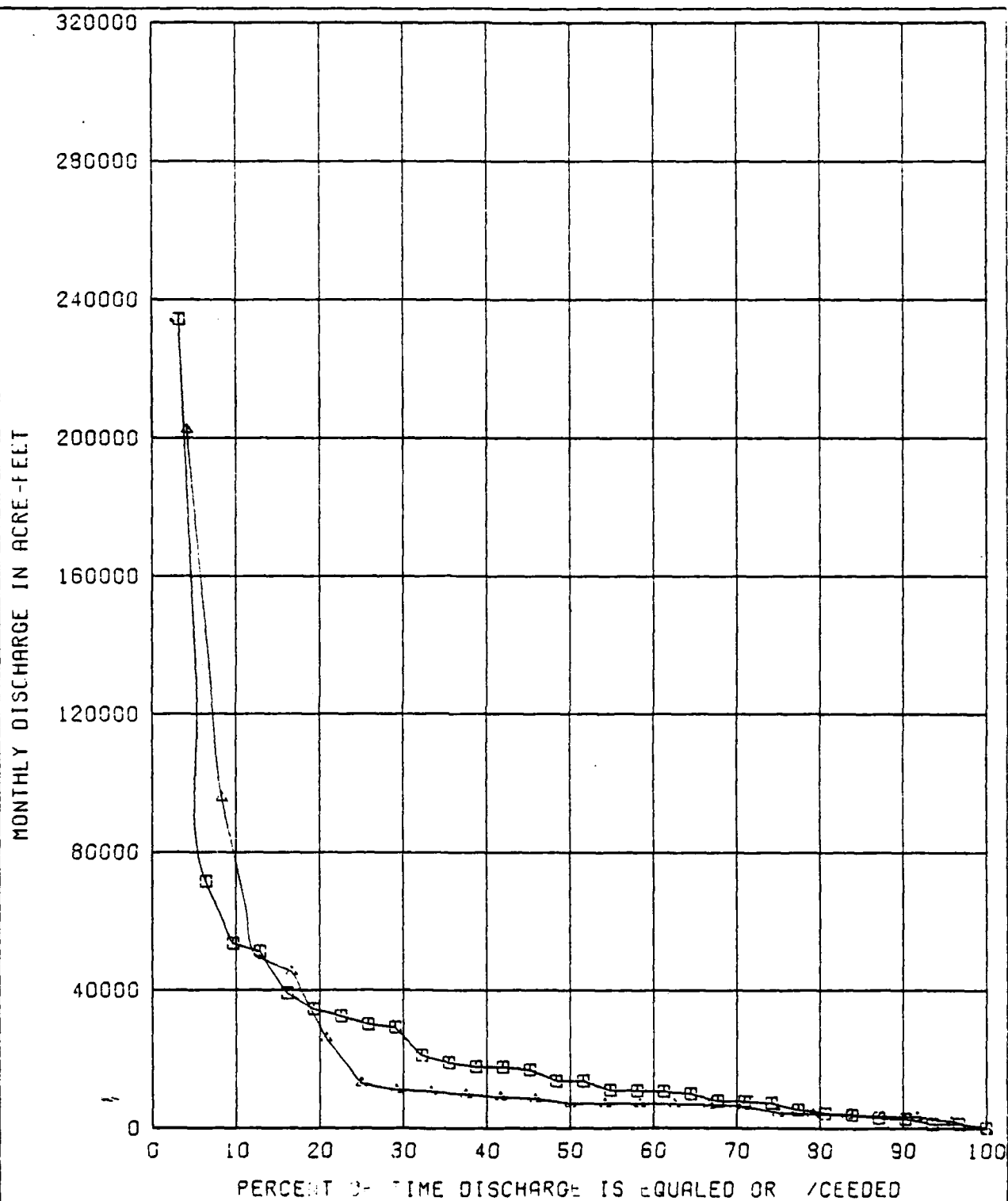


LEGEND

- — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1954)
- △ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1955-1979)

TRINITY RIVER BASIN, TEXAS
LEWISVILLE LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
DECEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980



LEGEND

□ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1954)

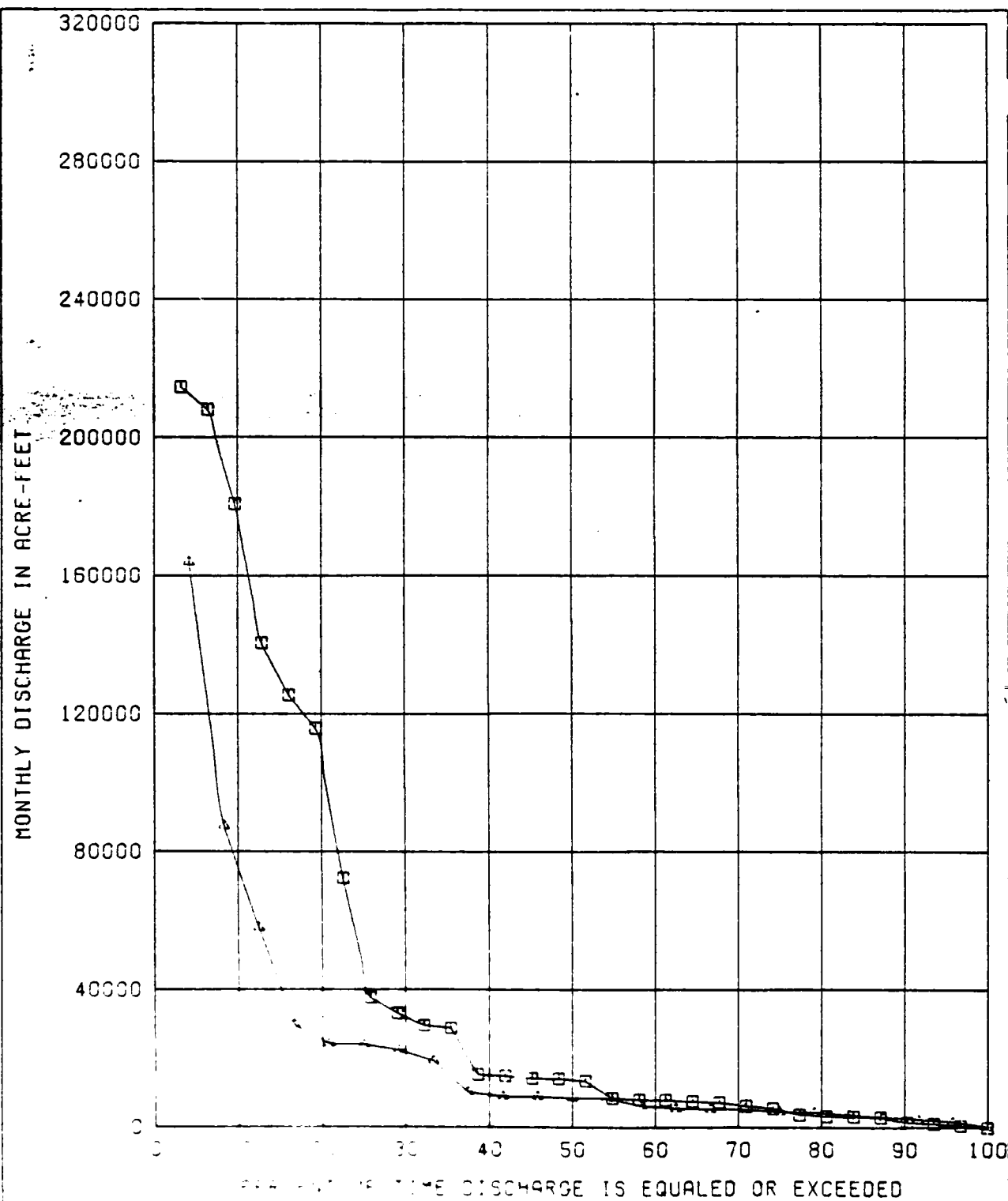
△ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1955-1979)

TRINITY RIVER BASIN, TEXAS
LEWISVILLE LAKE

FLOW DURATION CURVES AT DAM SITE
JANUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 13



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1954)

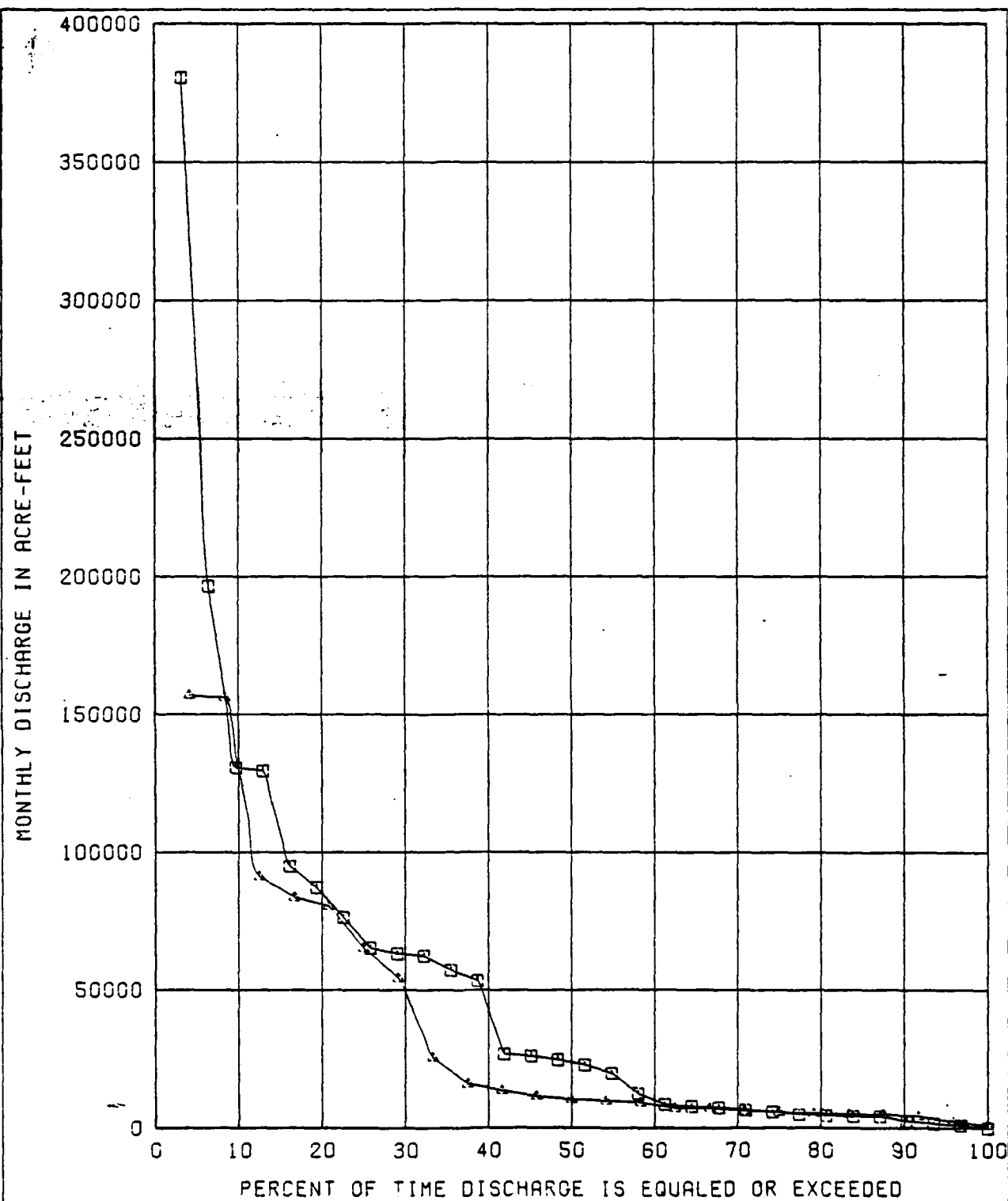
▲ — ▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1955-1979)

TRINITY RIVER BASIN, TEXAS
LEWISVILLE LAKE

FLOW DURATION CURVES AT DAM SITE
FEBRUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 14



LEGEND

□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1954)

△ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1955-1979)

TRINITY RIVER BASIN, TEXAS

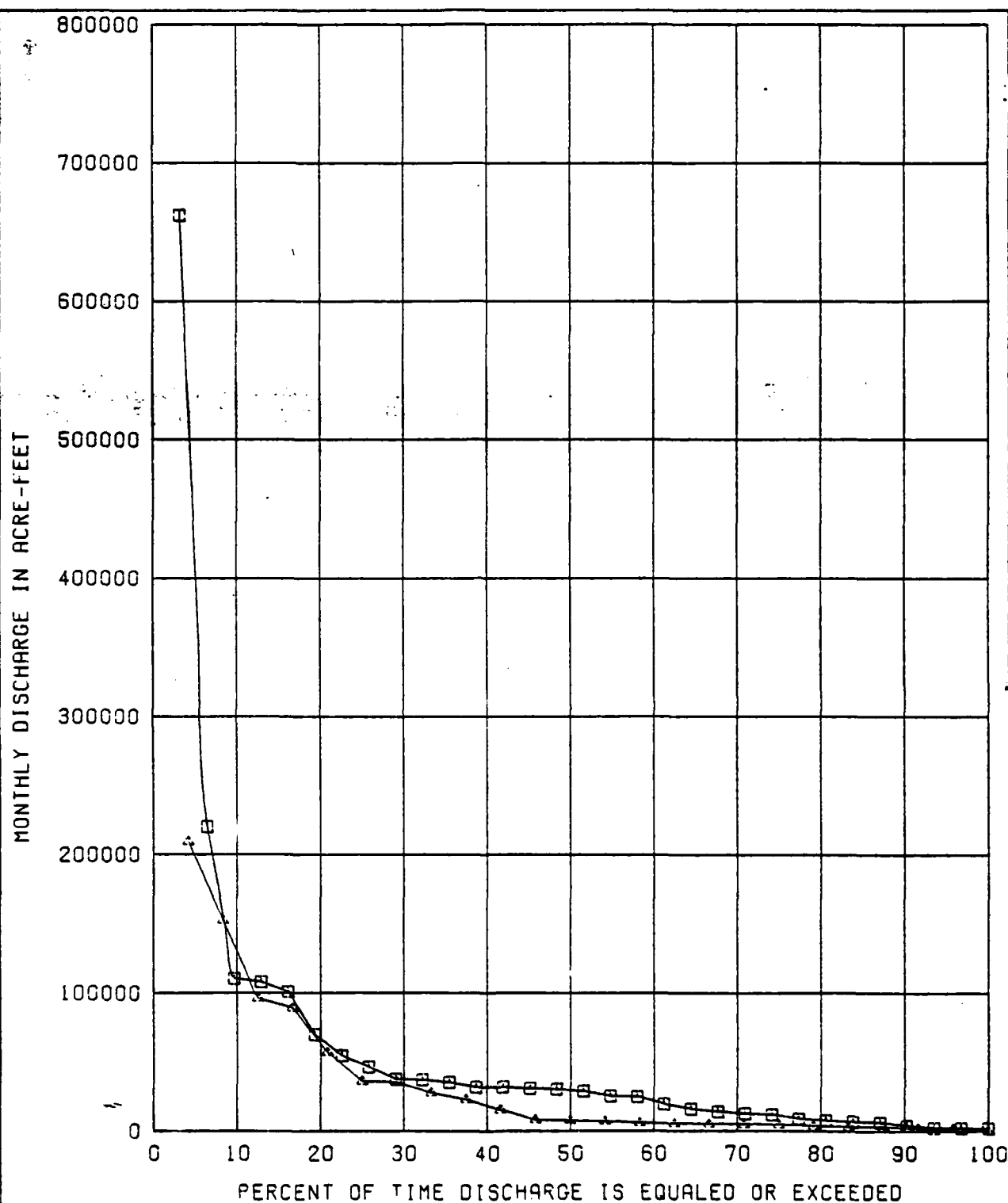
LEWISVILLE LAKE

FLOW DURATION CURVES AT DAM SITE

MARCH FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 15



LEGEND

□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1954)

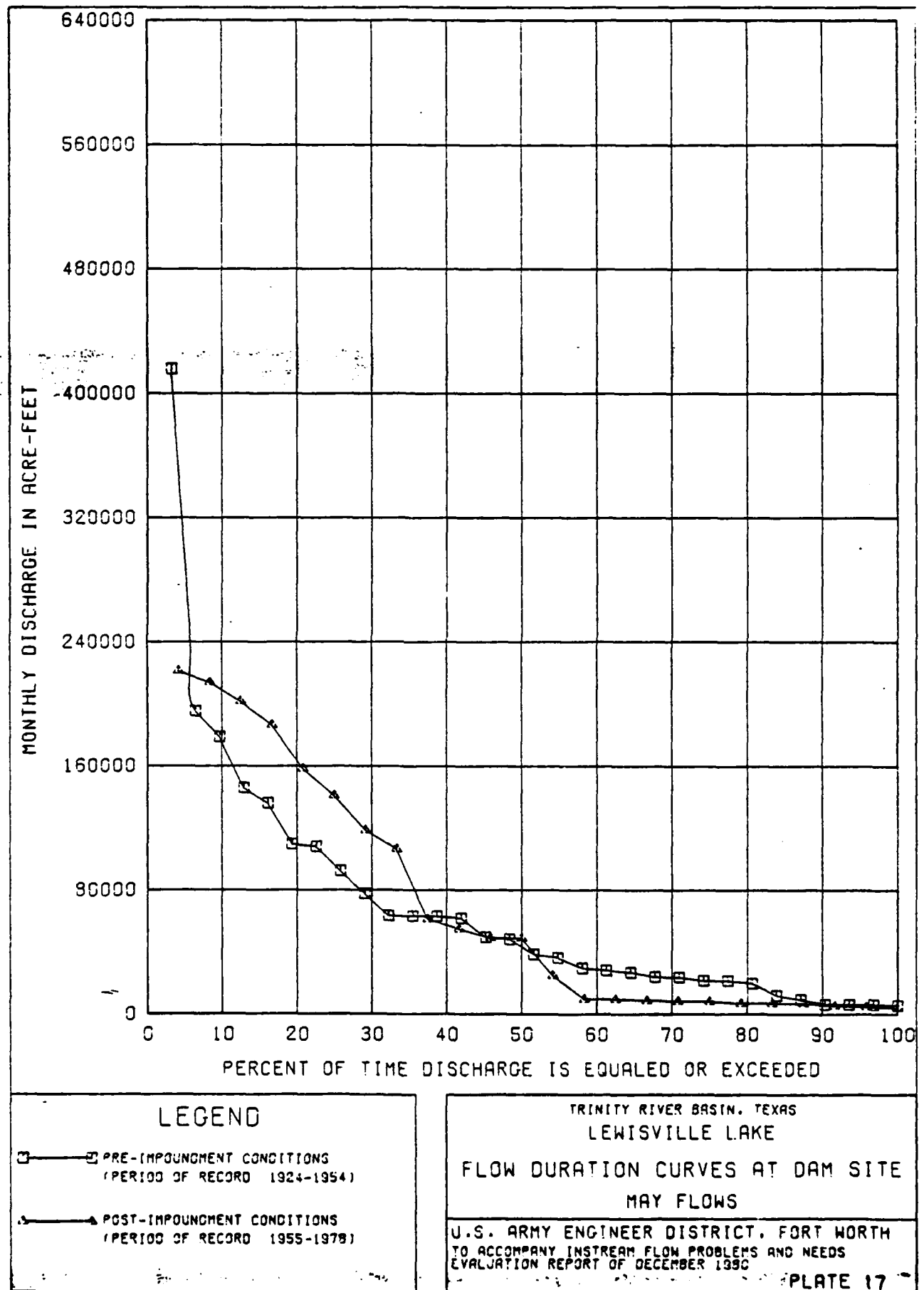
△ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1955-1979)

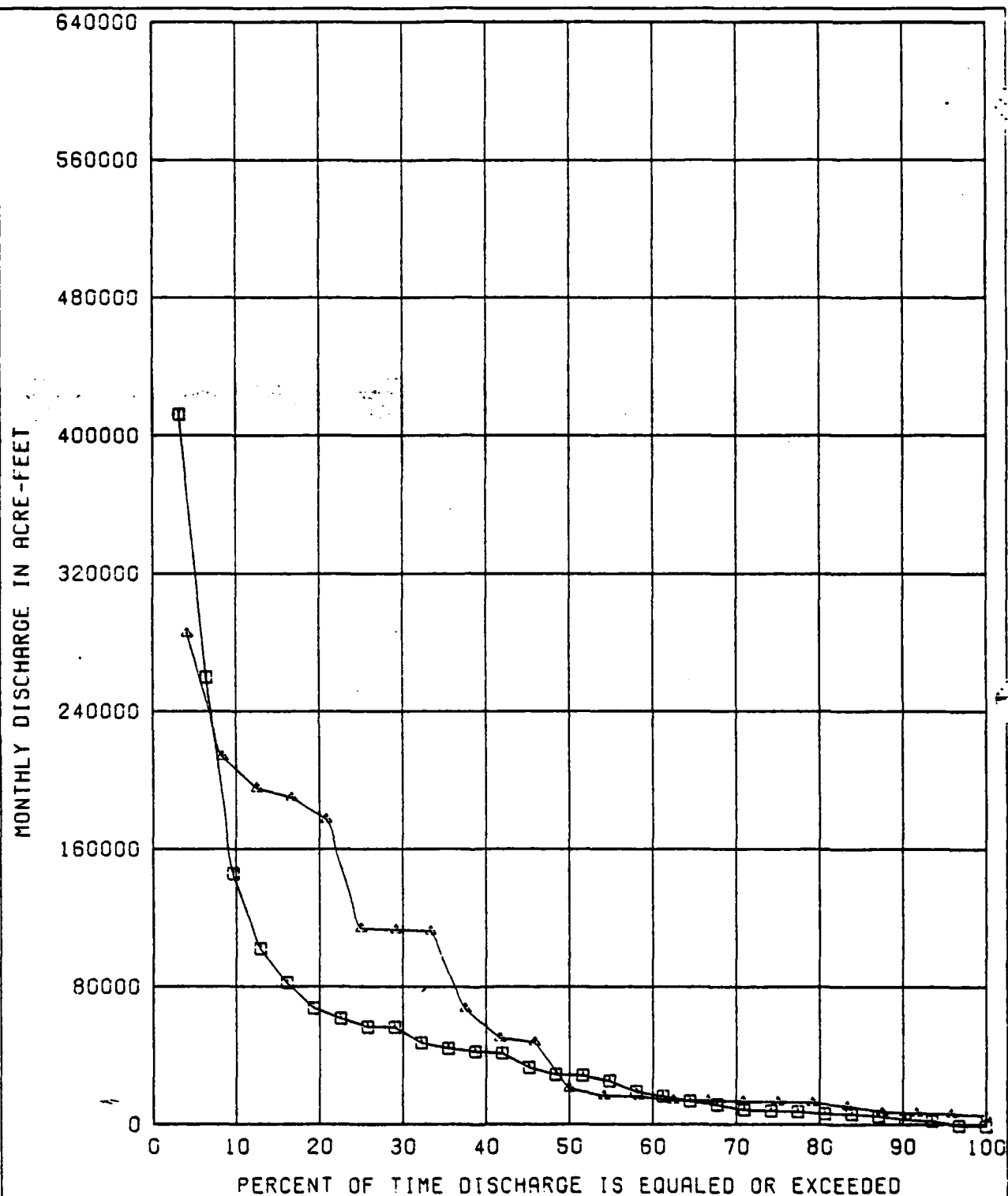
TRINITY RIVER BASIN, TEXAS
LEWISVILLE LAKE

FLOW DURATION CURVES AT DAM SITE
APRIL FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 16





LEGEND

□ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1954)

△ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1955-1979)

TRINITY RIVER BASIN, TEXAS

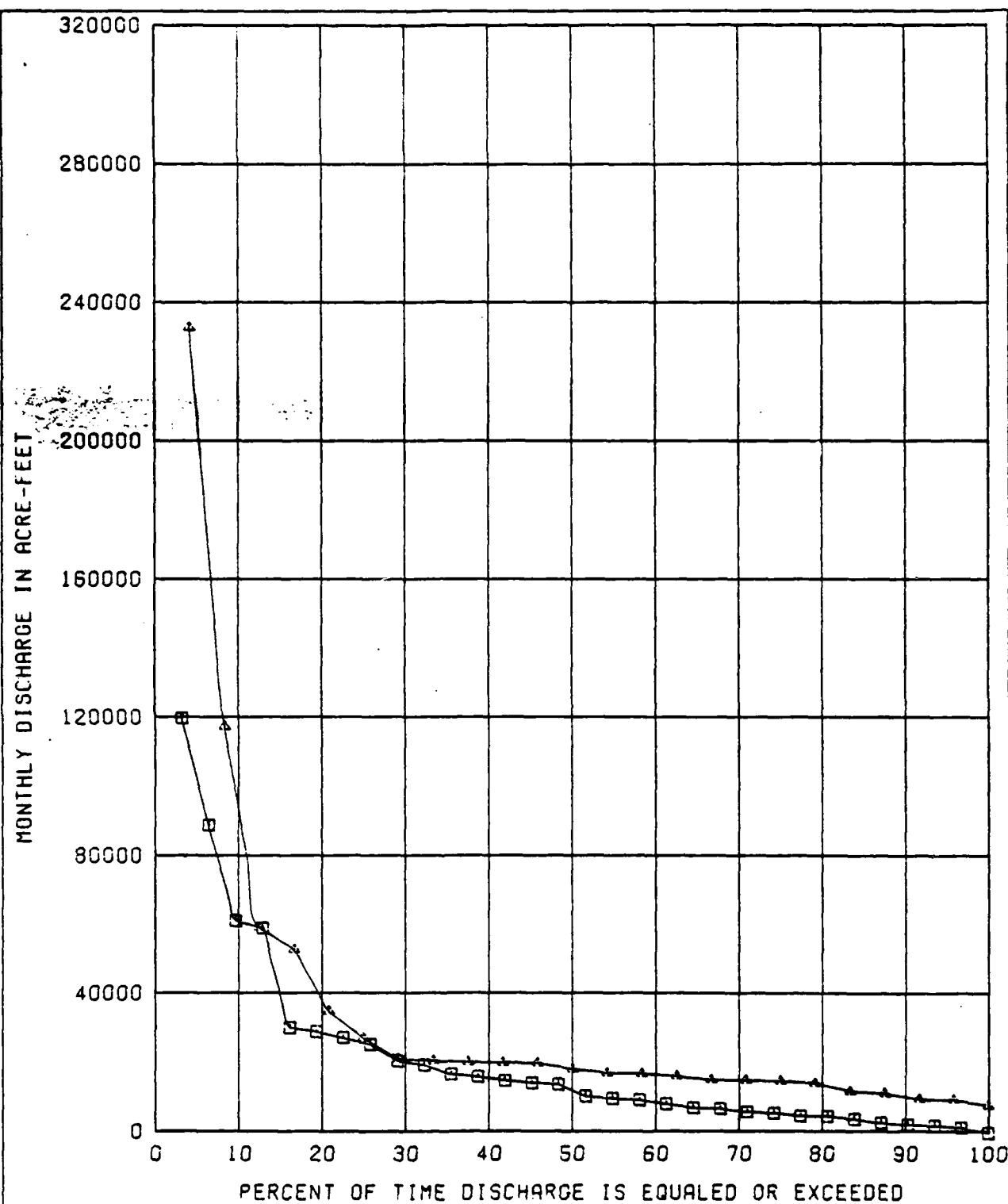
LEWISVILLE LAKE

FLOW DURATION CURVES AT DAM SITE

JUNE FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 18



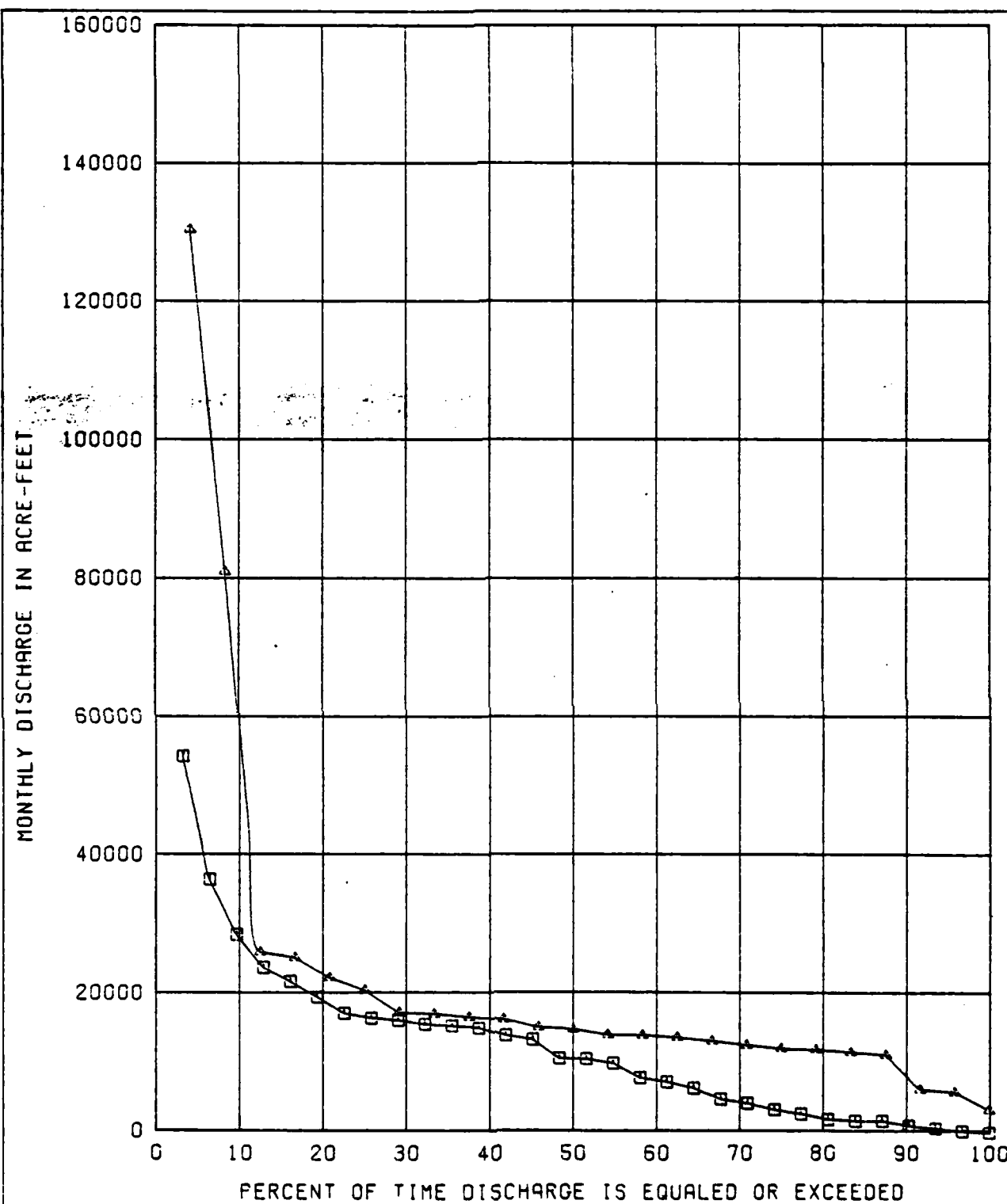
LEGEND

- — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1954)
- △ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1955-1979)

TRINITY RIVER BASIN, TEXAS
LEWISVILLE LAKE

FLOW DURATION CURVES AT DAM SITE
JULY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990



LEGEND

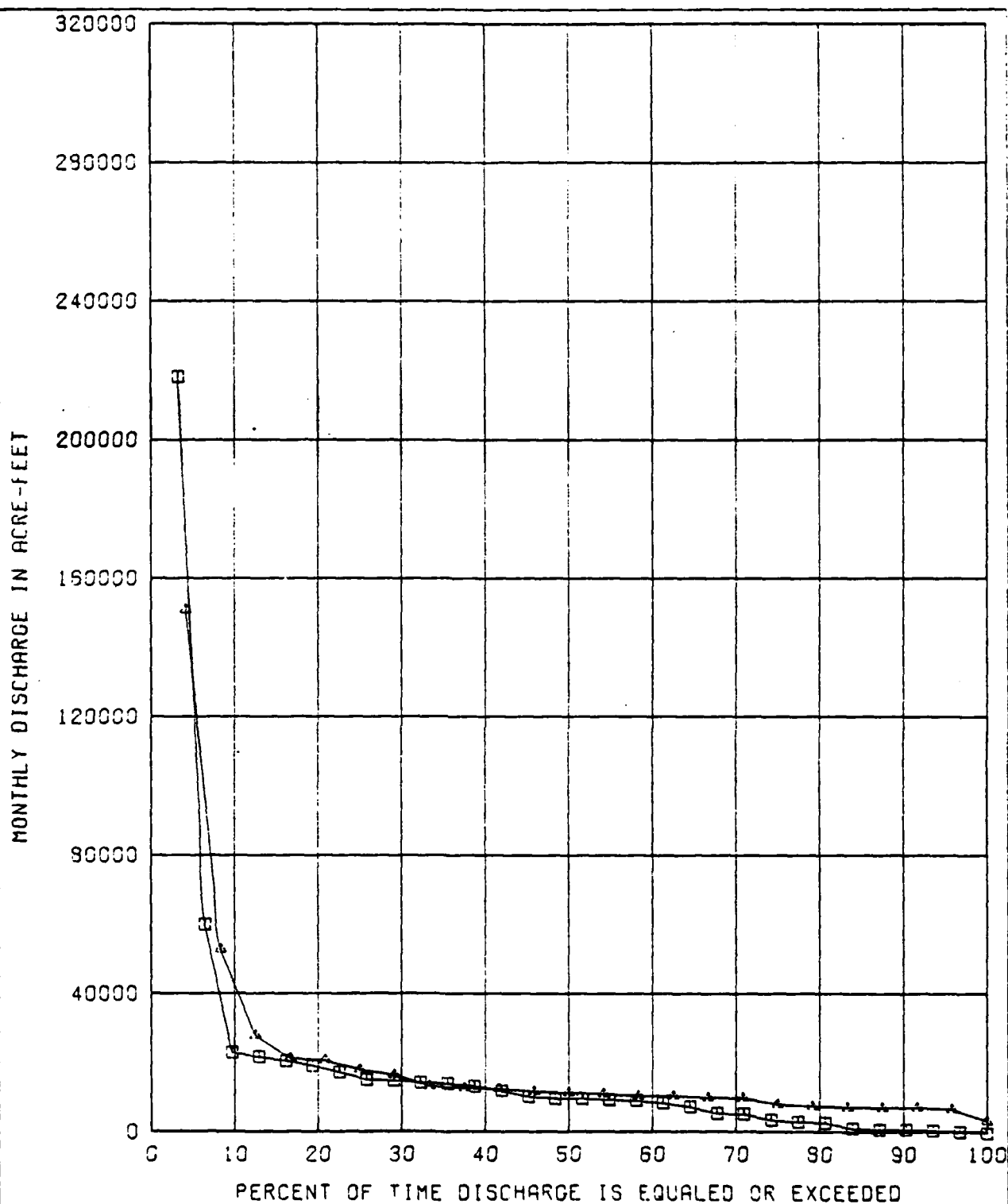
- — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1954)
- ▲ — ▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1955-1979)

TRINITY RIVER BASIN, TEXAS
LEWISVILLE LAKE

FLOW DURATION CURVES AT DAM SITE
AUGUST FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 20



LEGEND

□ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1954)

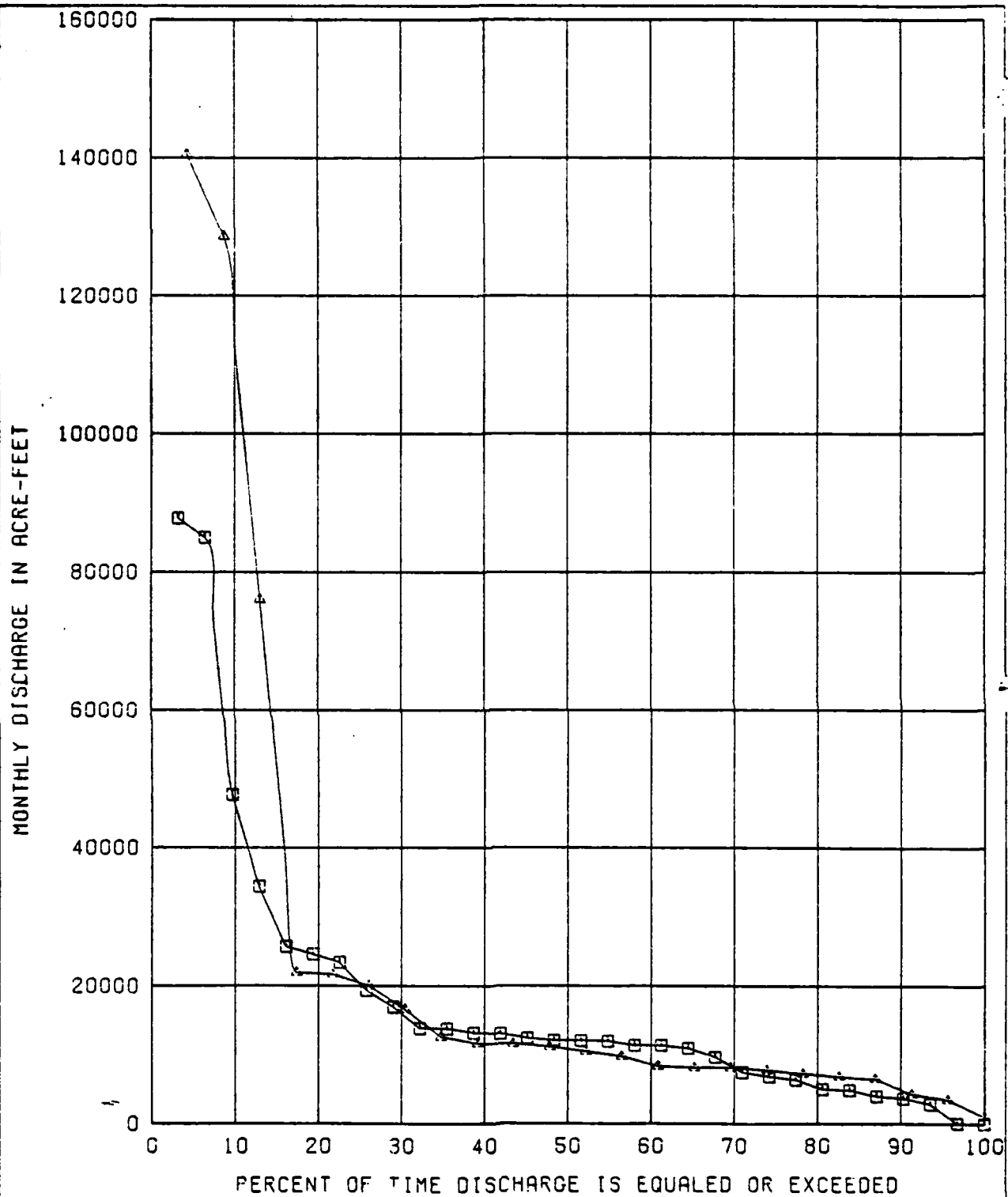
▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1955-1979)

TRINITY RIVER BASIN, TEXAS
LEWISVILLE LAKE

FLOW DURATION CURVES AT DAM SITE
SEPTEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 21



LEGEND

□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1954)

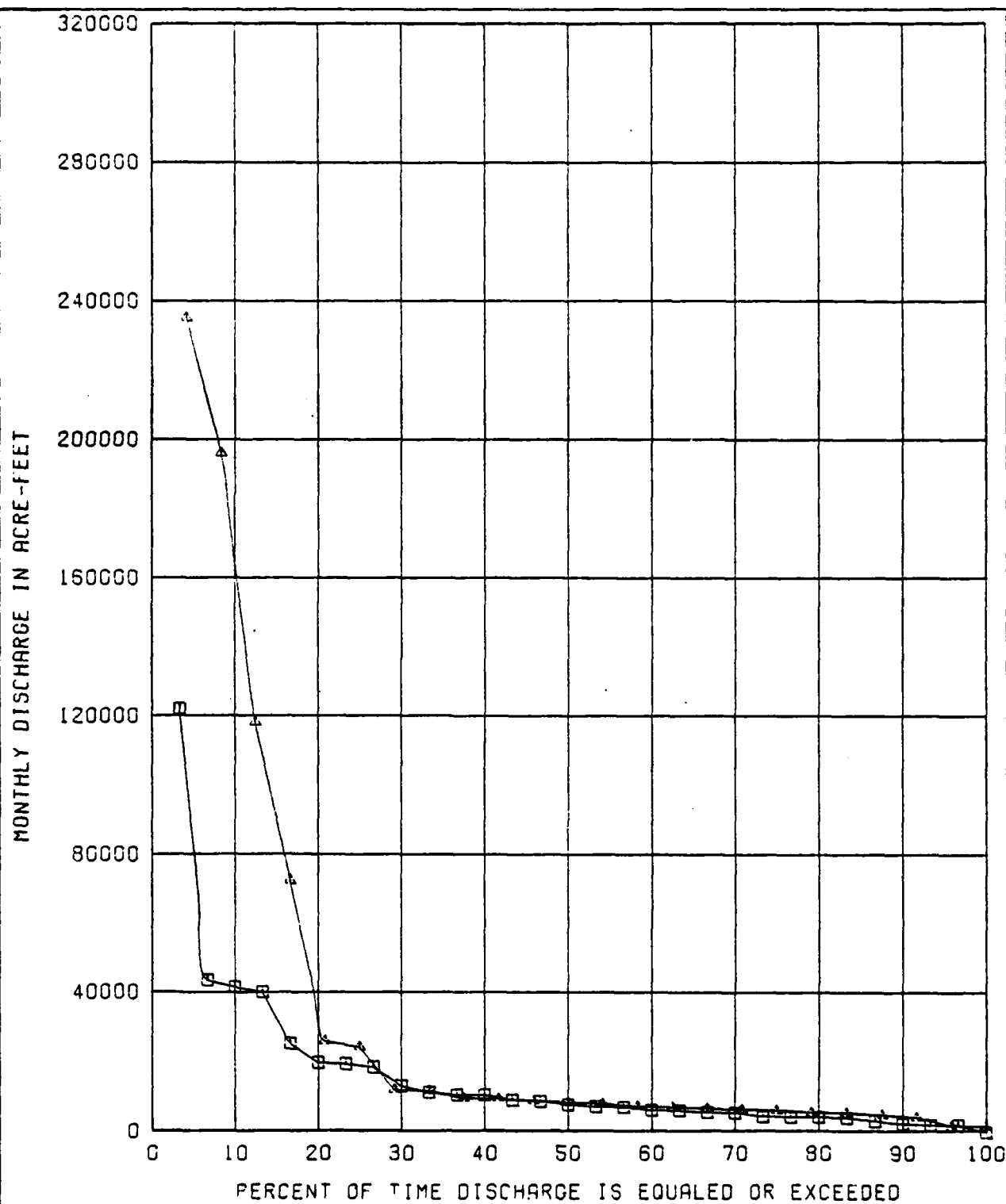
▲ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1955-1979)

TRINITY RIVER BASIN, TEXAS
LEWISVILLE LAKE

FLOW DURATION CURVES AT DAM SITE
OCTOBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 22



LEGEND

□ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1954)

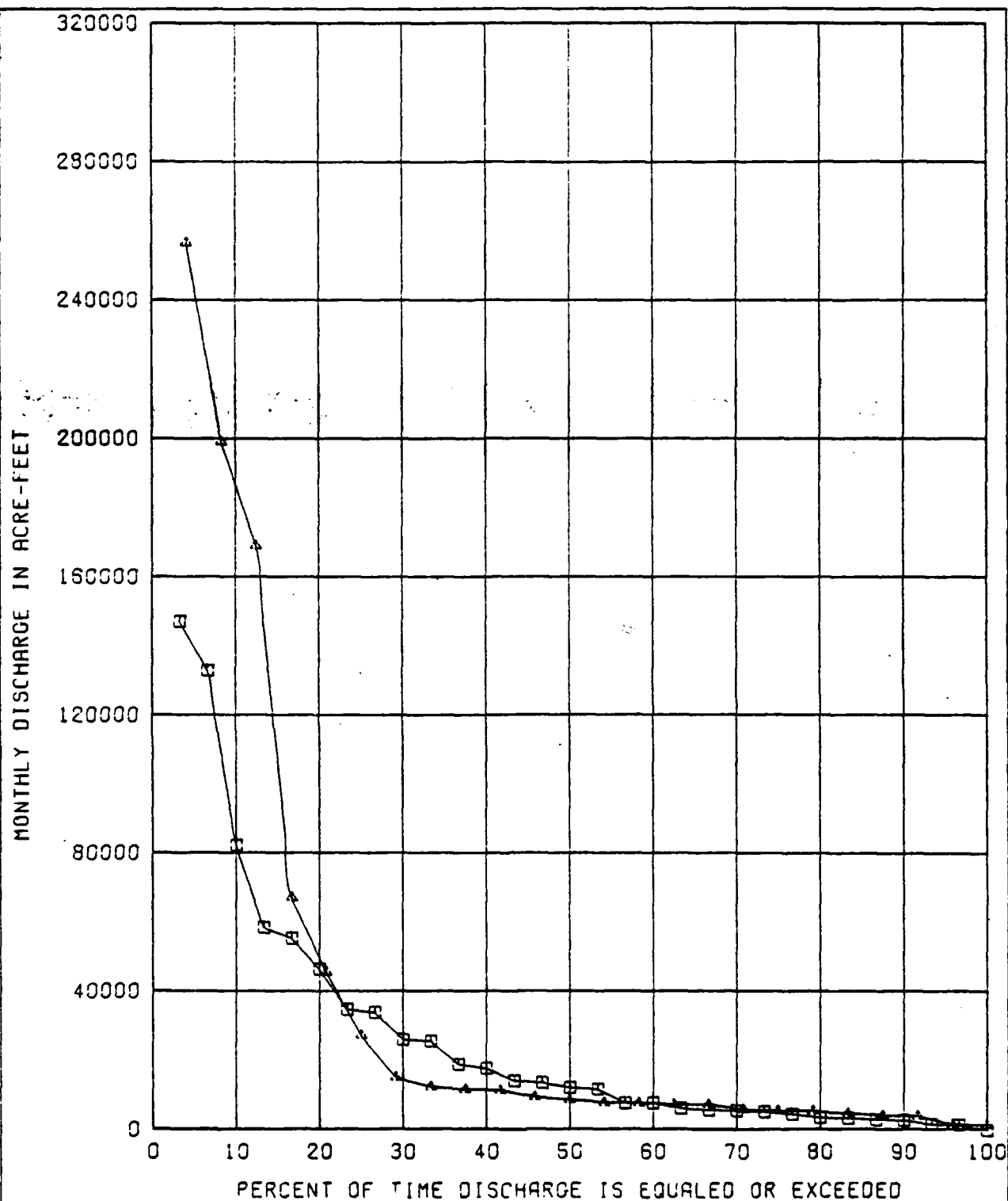
▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1955-1979)

TRINITY RIVER BASIN, TEXAS
LEWISVILLE LAKE

FLOW DURATION CURVES AT DAM SITE
NOVEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 23



LEGEND

□ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1954)

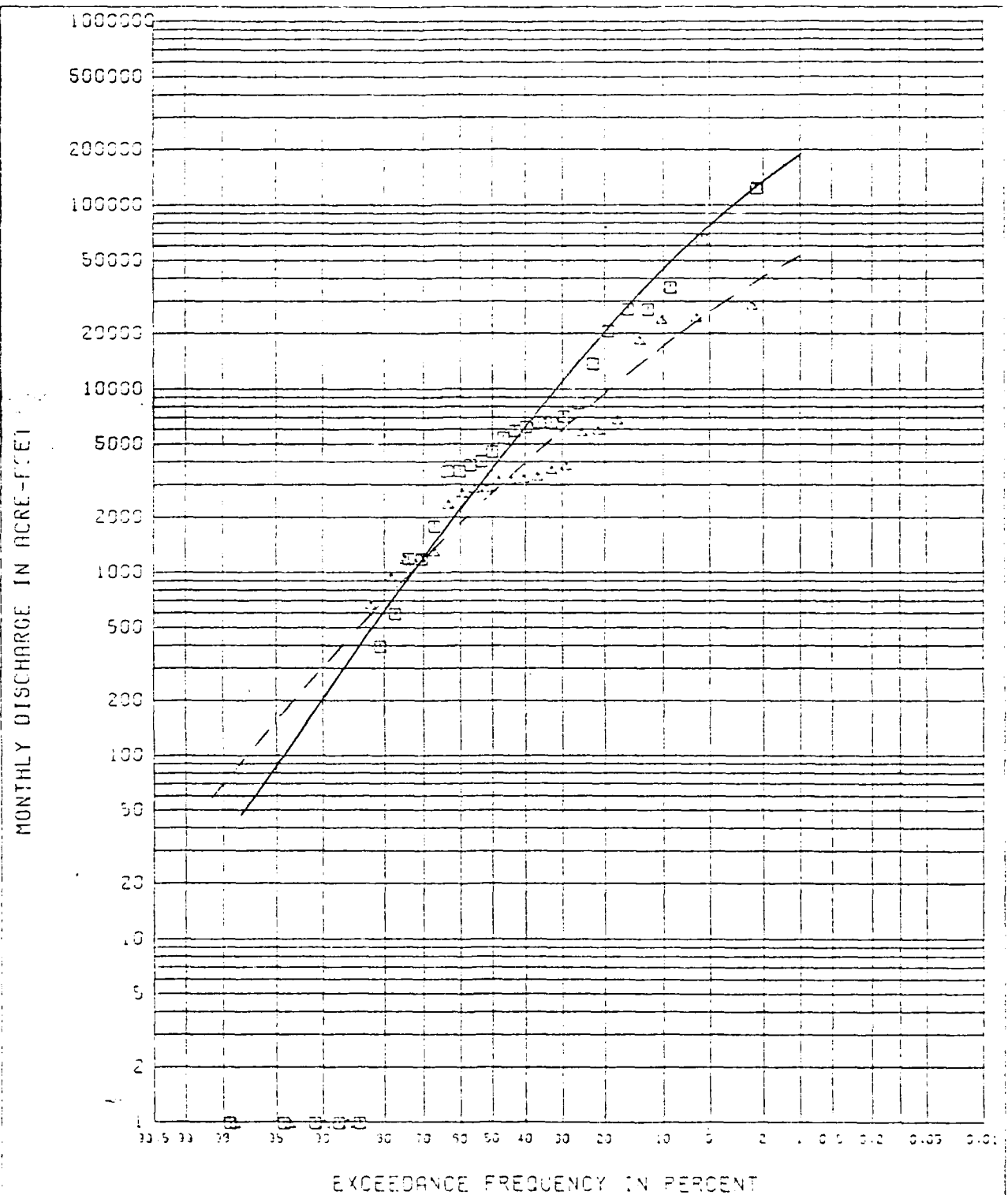
▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1955-1979)

TRINITY RIVER BASIN, TEXAS
LEWISVILLE LAKE

FLOW DURATION CURVES AT DAM SITE
DECEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 24



LEGEND

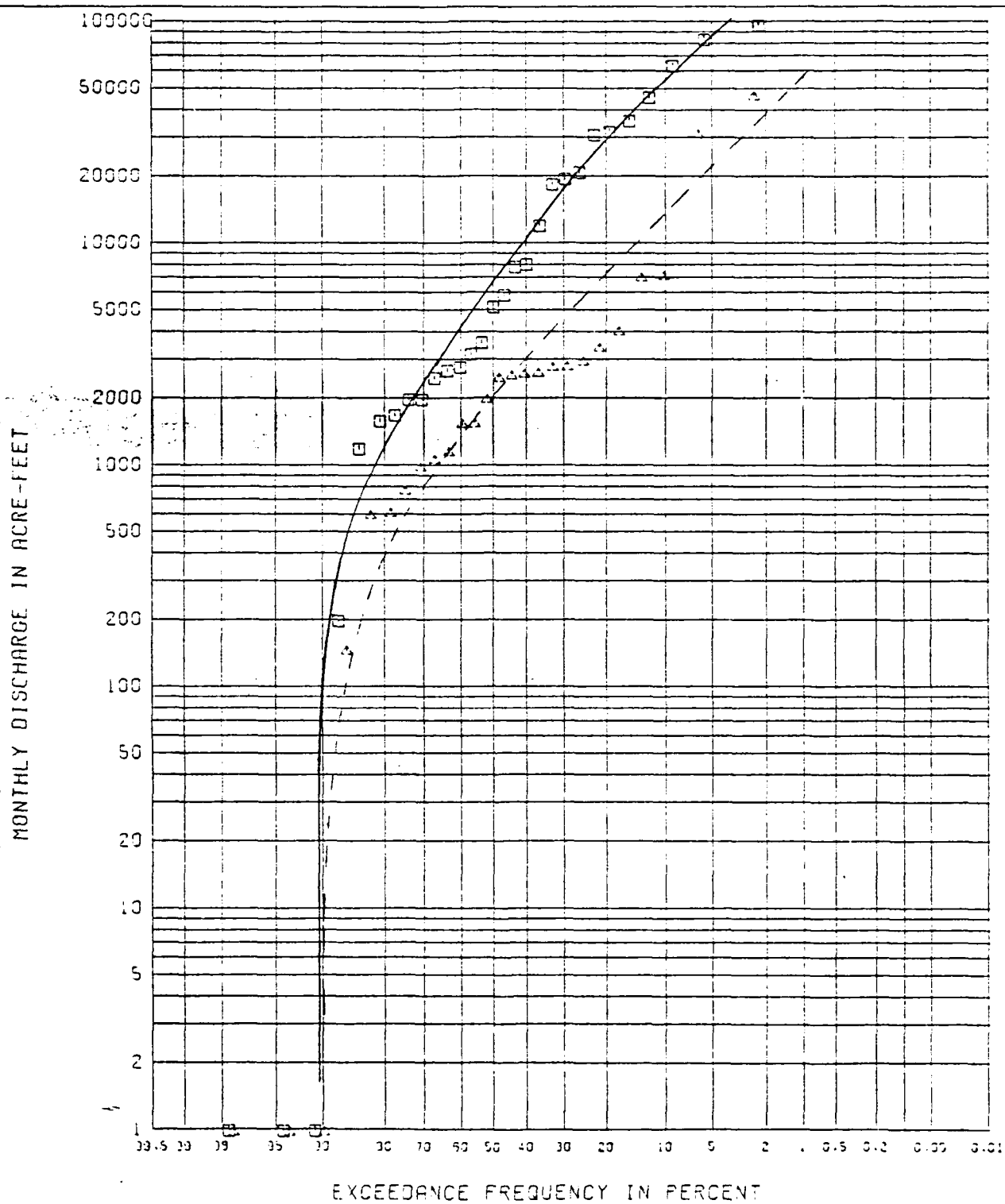
—■— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1952)

- - -▲- - - POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

TRINITY RIVER BASIN, TEXAS
GRAPEVINE RESERVOIR
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
JANUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 1



LEGEND

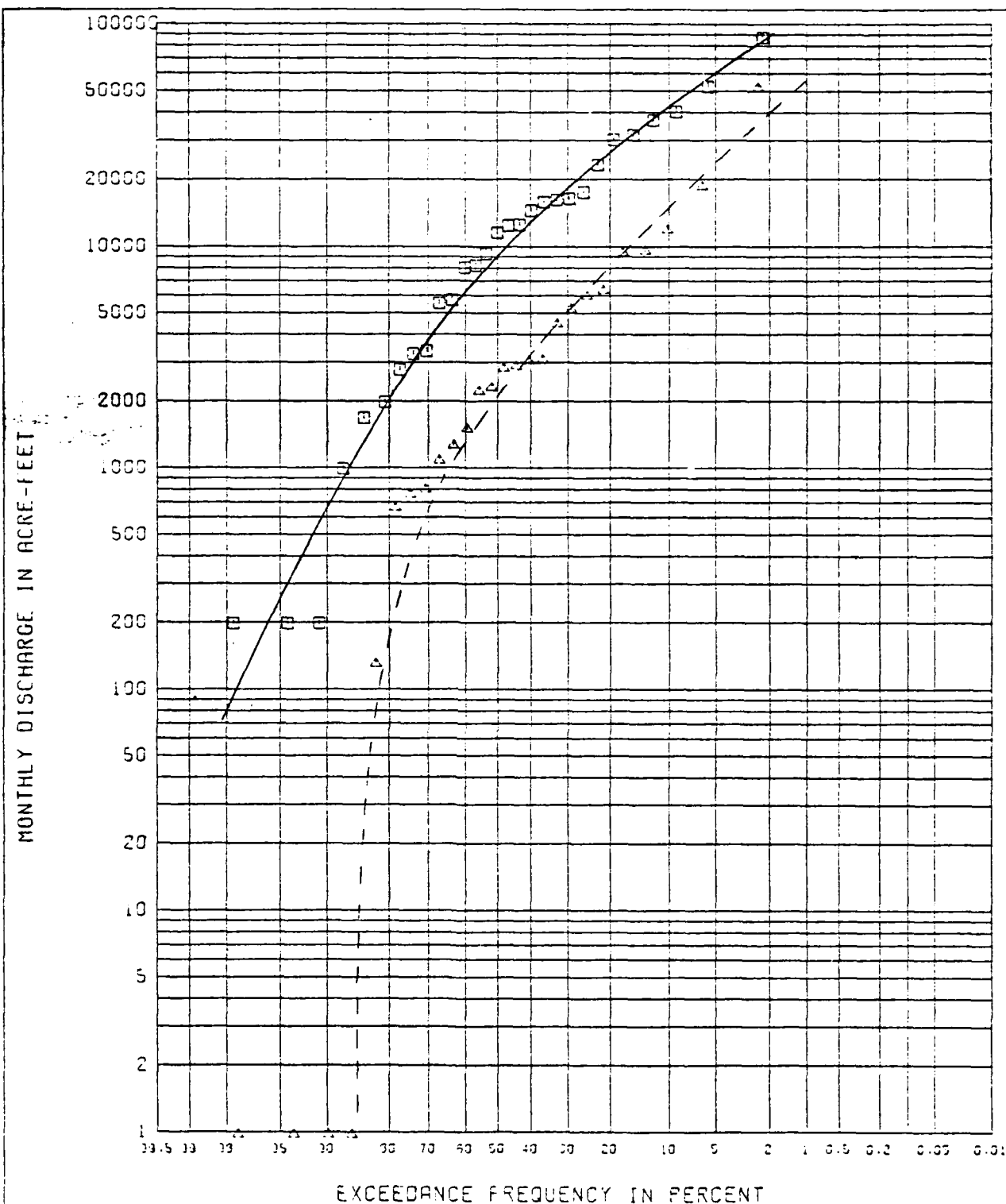
□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1952)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

TRINITY RIVER BASIN, TEXAS
GRAPEVINE RESERVOIR
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
FEBRUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 2



LEGEND

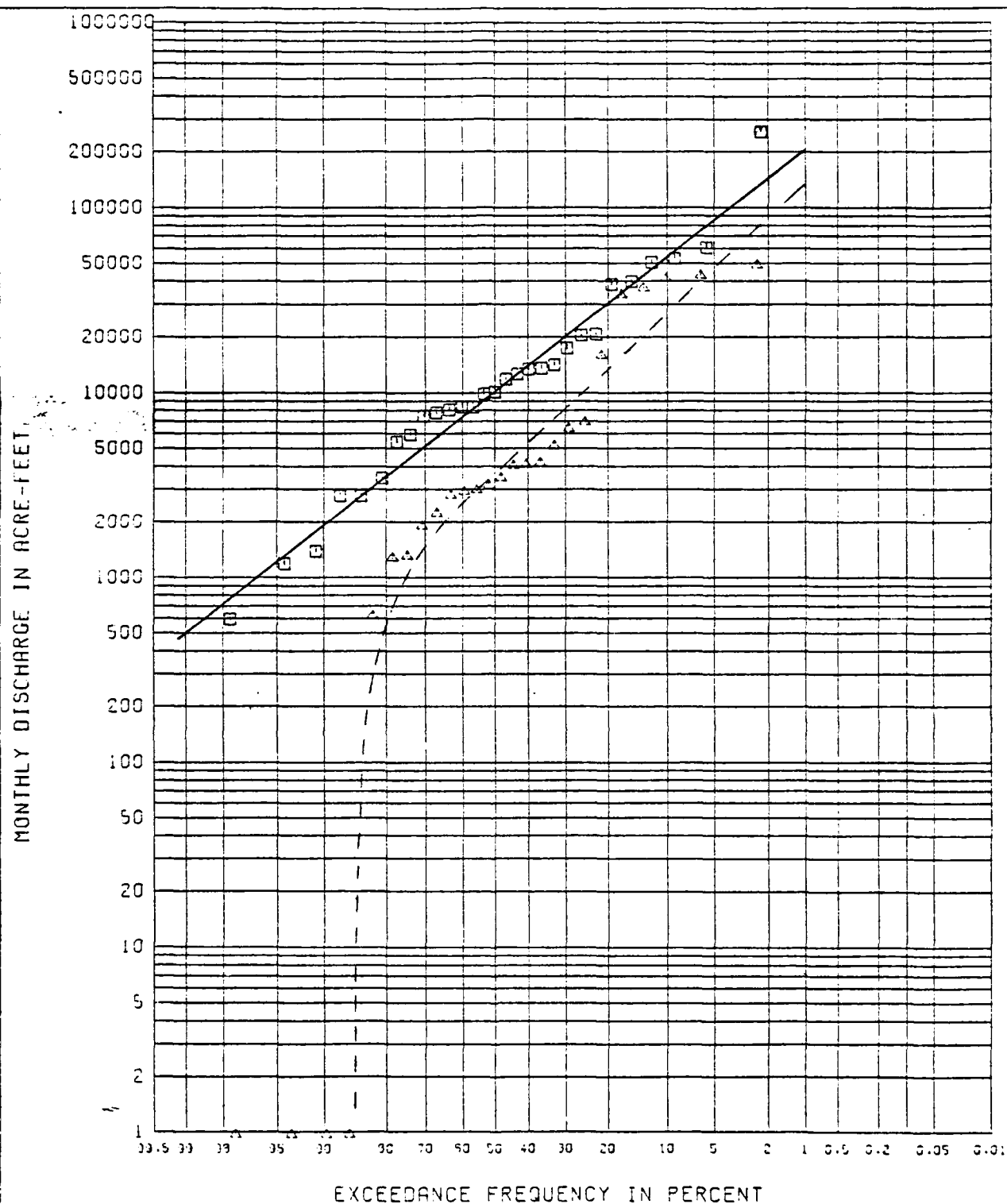
—■— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1952)

-▲- POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

TRINITY RIVER BASIN, TEXAS
GRAPEVINE RESERVOIR
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
MARCH FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 3



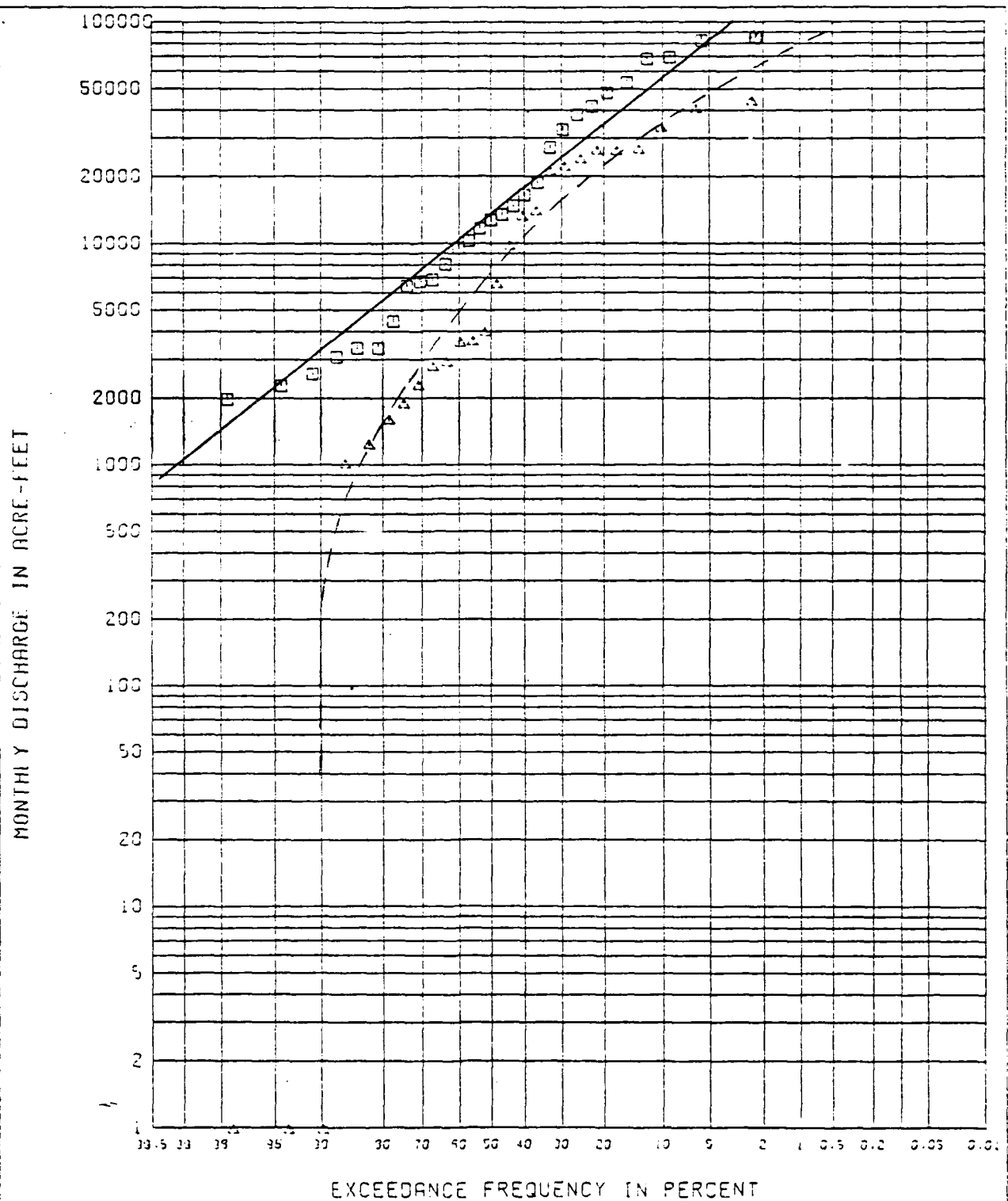
LEGEND

- — □ PRE-IMPOUNDMENT CONDITIONS
 (PERIOD OF RECORD 1924-1952)
- △ — △ POST-IMPOUNDMENT CONDITIONS
 (PERIOD OF RECORD 1952-1979)

TRINITY RIVER BASIN, TEXAS
 GRAPEVINE RESERVOIR
 DISCHARGE-FREQUENCY RELATIONS
 AT DAM SITE
 APRIL FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
 TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
 EVALUATION REPORT OF DECEMBER 1980

PLATE 4



LEGEND

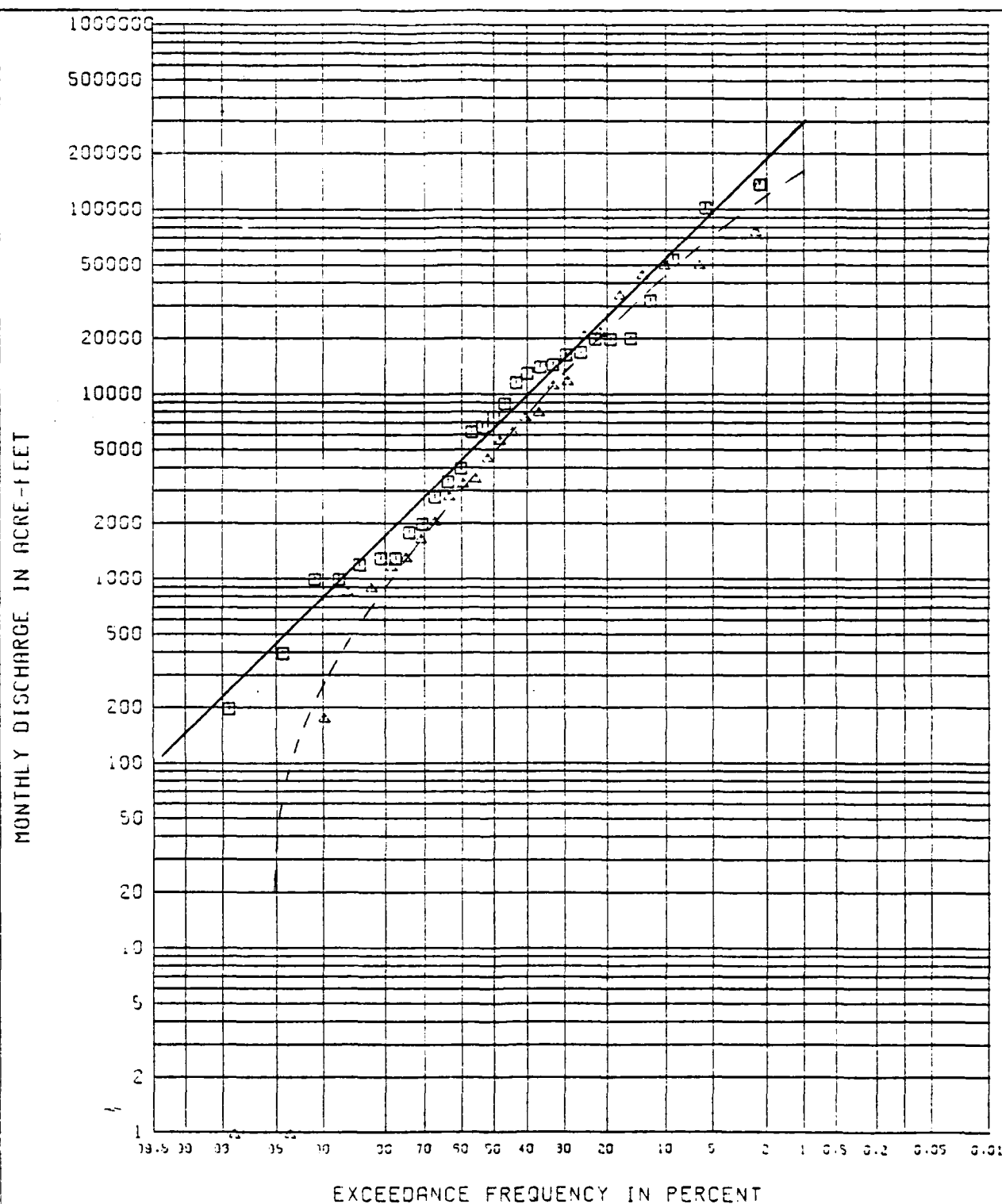
□ — □ PRE-IMPONDMENT CONDITIONS
(PERIOD OF RECORD 1924-1952)

△ — △ POST-IMPONDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

TRINITY RIVER BASIN, TEXAS
GRAPEVINE RESERVOIR
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
MAY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 5



LEGEND

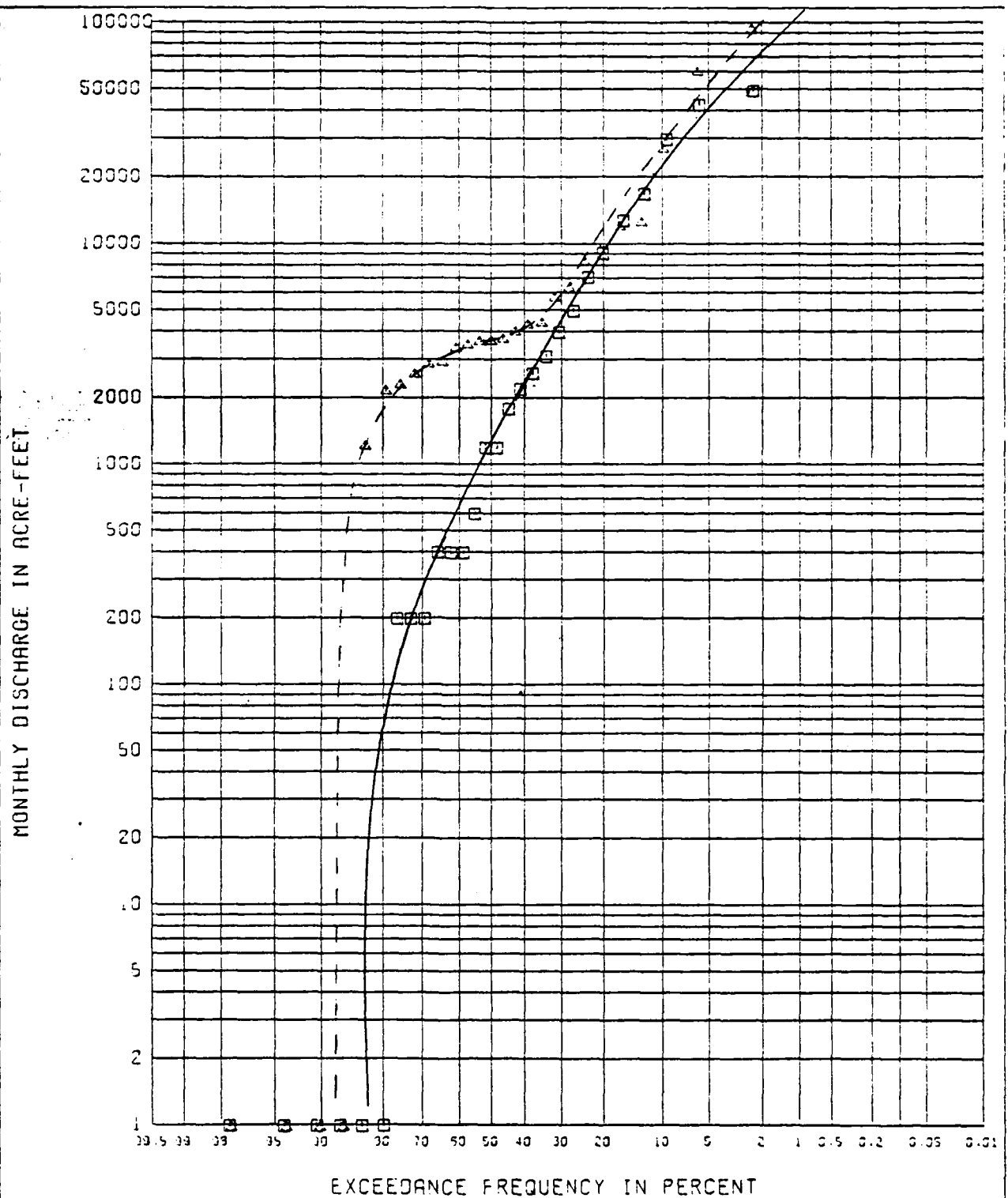
□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1952)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

TRINITY RIVER BASIN, TEXAS
GRAPEVINE RESERVOIR
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
JUNE FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 6



LEGEND

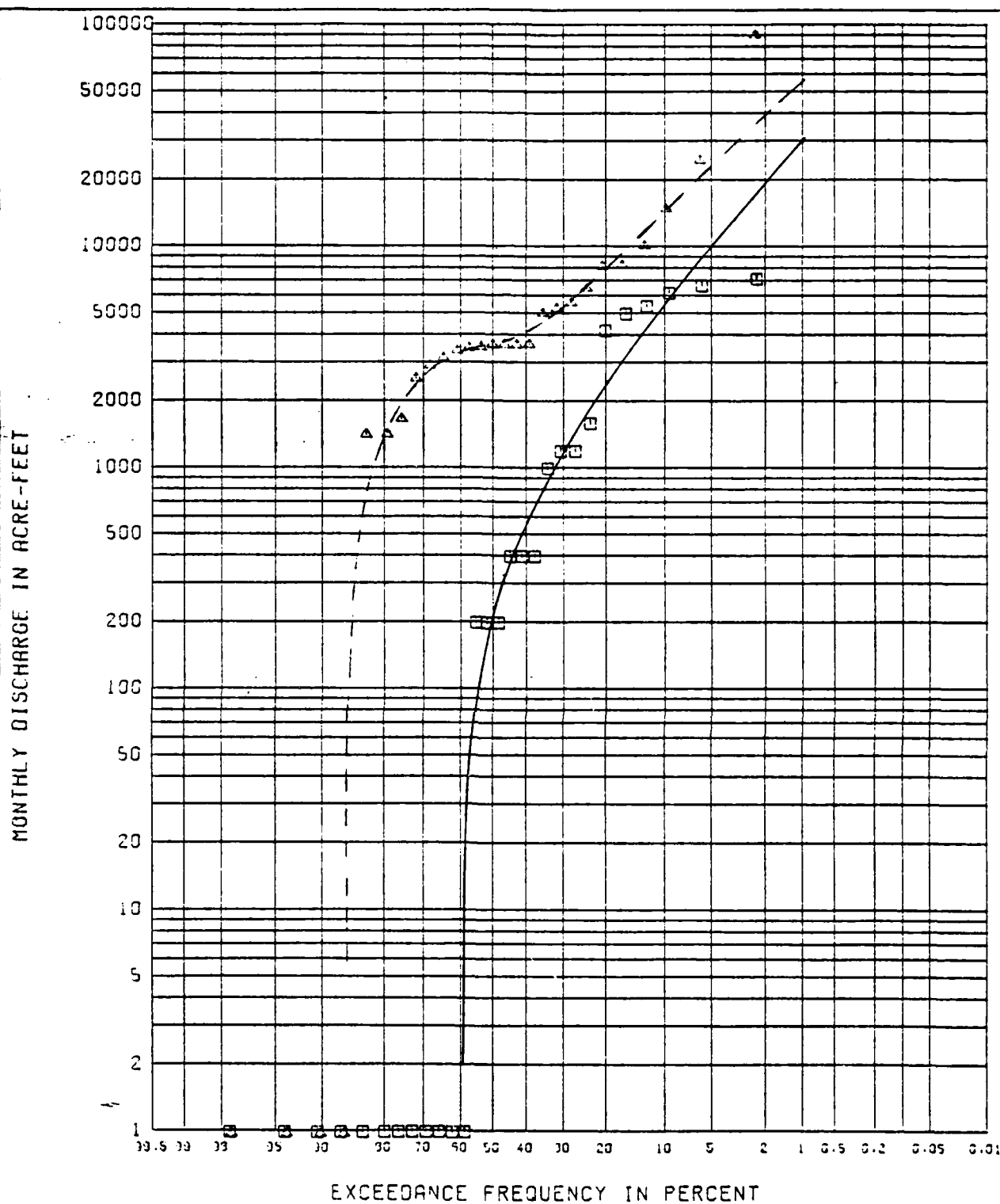
□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1952)

▲ — ▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

TRINITY RIVER BASIN, TEXAS
GRAPEVINE RESERVOIR
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
JULY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 7.

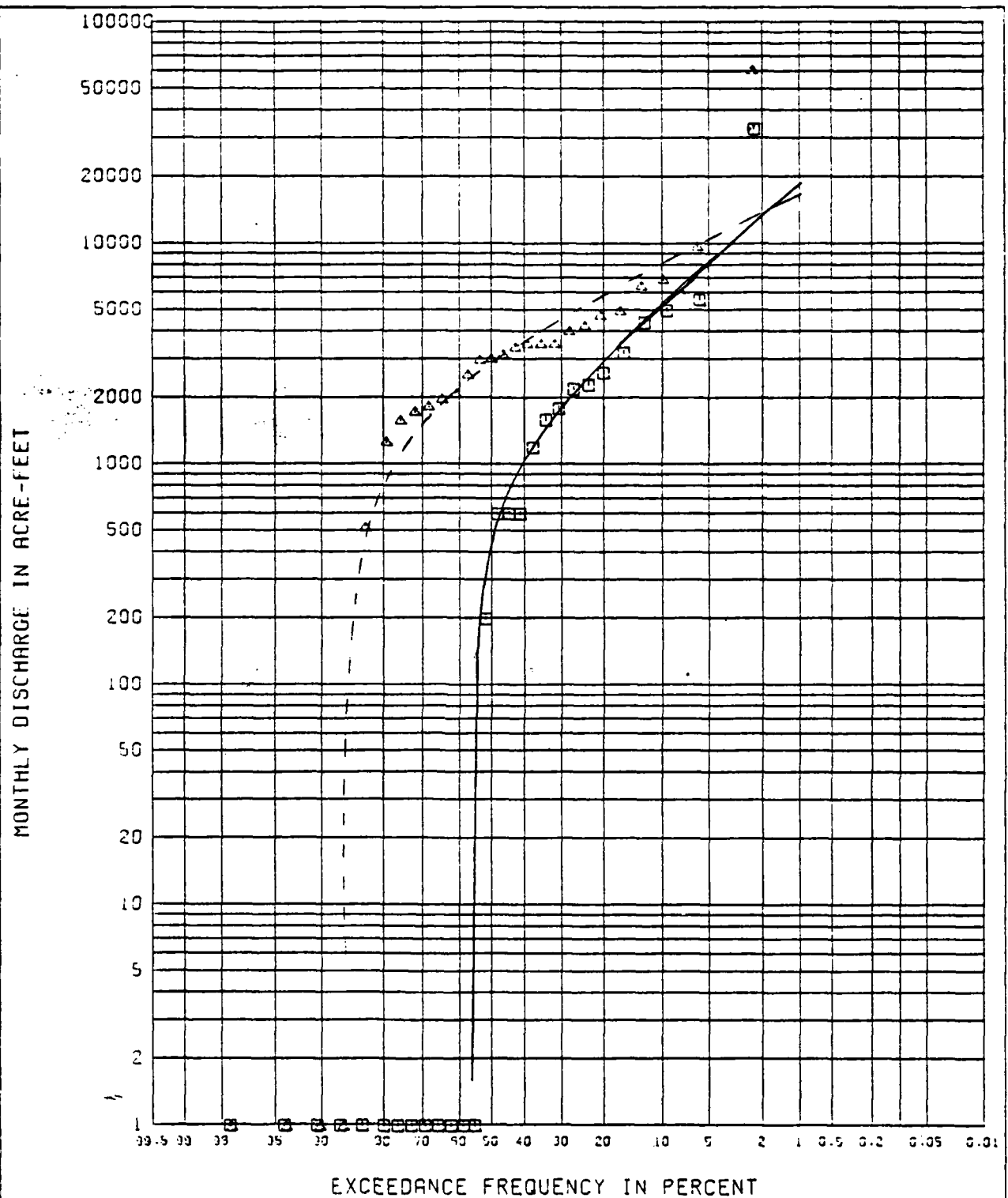


LEGEND

- PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1952)
- POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

TRINITY RIVER BASIN, TEXAS
GRAPEVINE RESERVOIR
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
AUGUST FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980



LEGEND

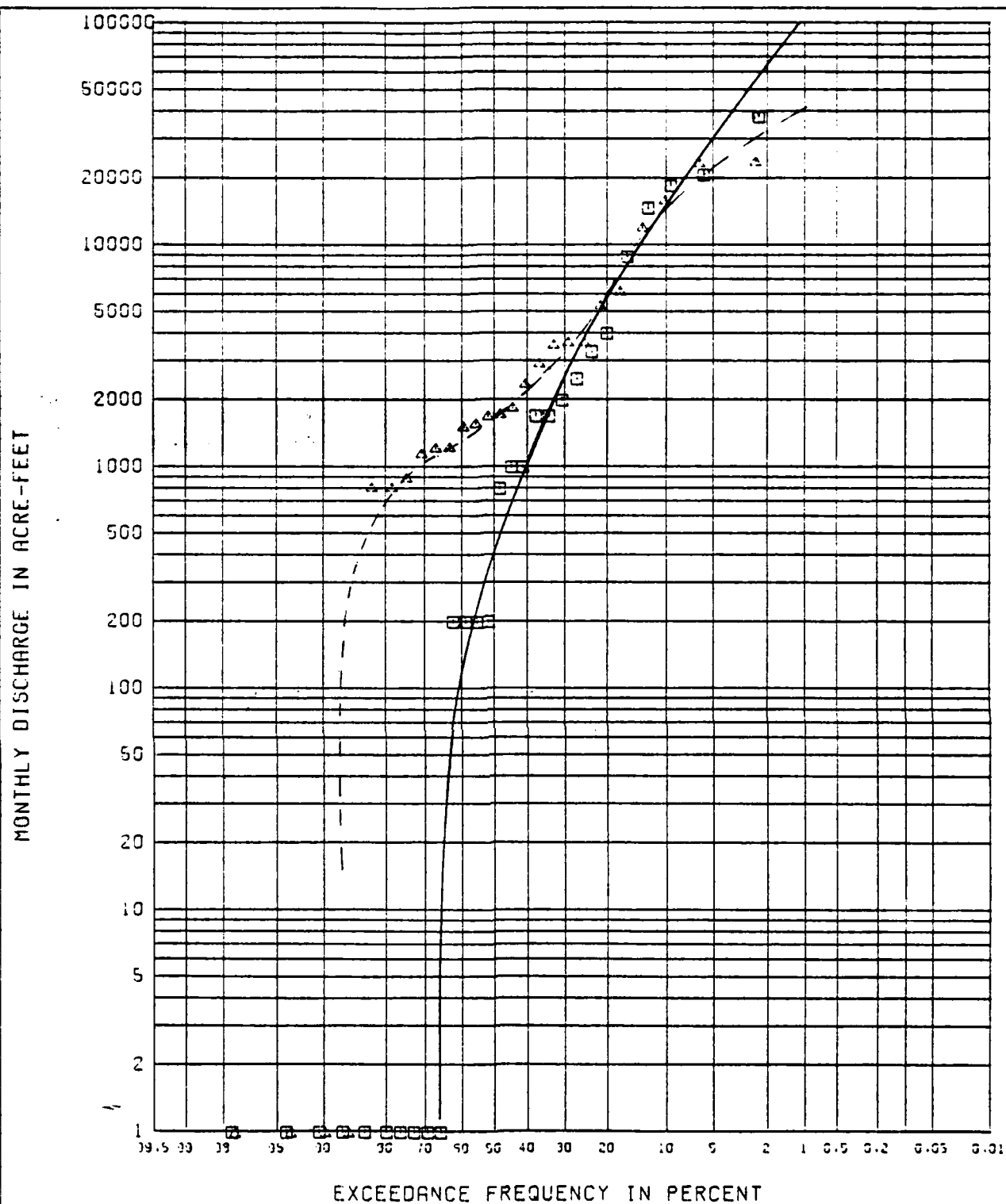
□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1952)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

TRINITY RIVER BASIN, TEXAS
GRAPEVINE RESERVOIR
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
SEPTEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 9



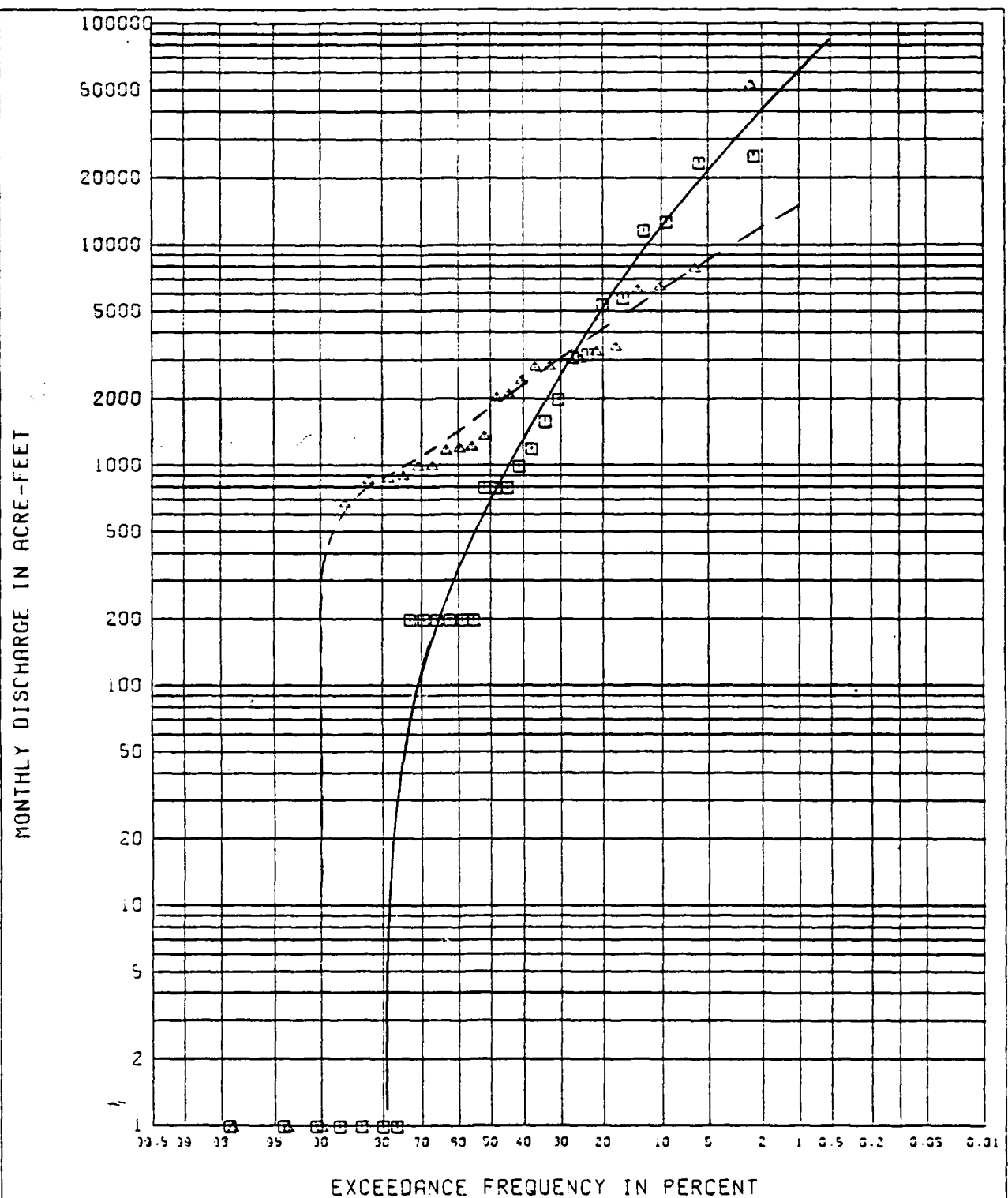
LEGEND

- — □ PRE-IMPOUNDMENT CONDITIONS
 (PERIOD OF RECORD 1924-1952)
- ▲ — ▲ POST-IMPOUNDMENT CONDITIONS
 (PERIOD OF RECORD 1952-1979)

TRINITY RIVER BASIN, TEXAS
 GRAPEVINE RESERVOIR
 DISCHARGE-FREQUENCY RELATIONS
 AT DAM SITE
 OCTOBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
 TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
 EVALUATION REPORT OF DECEMBER 1980

PLATE 10



LEGEND

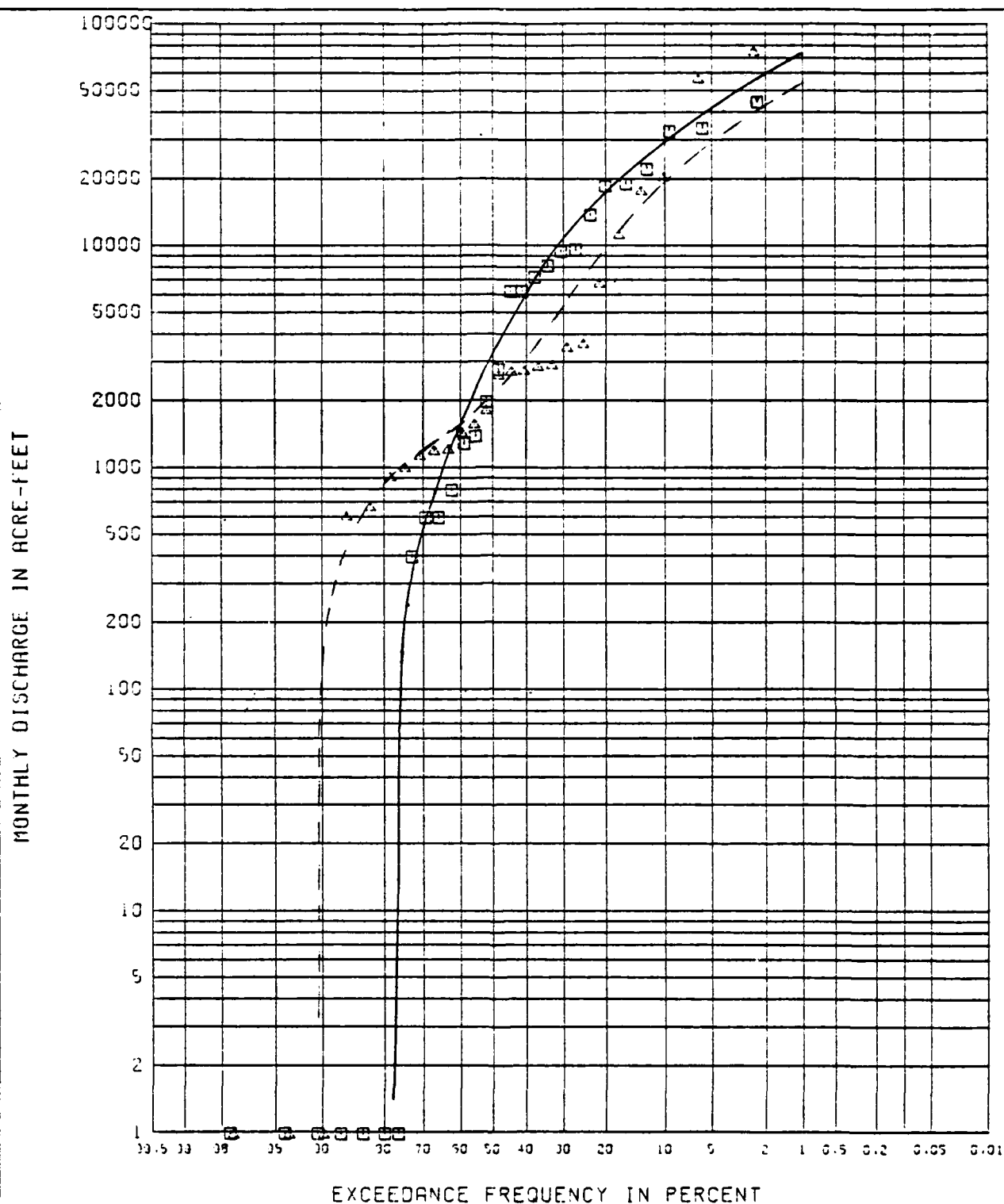
□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1952)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

TRINITY RIVER BASIN, TEXAS
GRAPEVINE RESERVOIR
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
NOVEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

--- PLATE 11



LEGEND

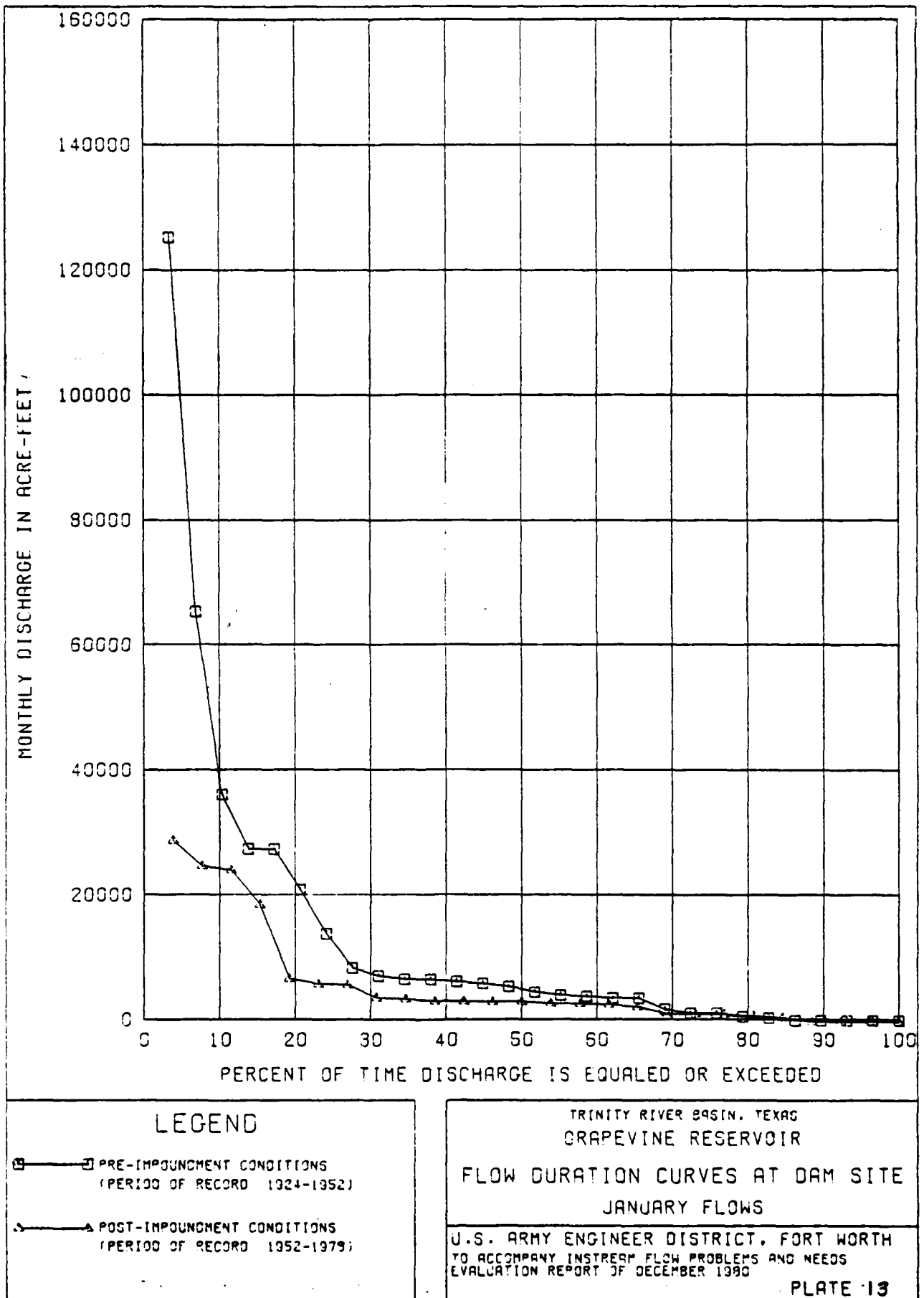
— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1952)

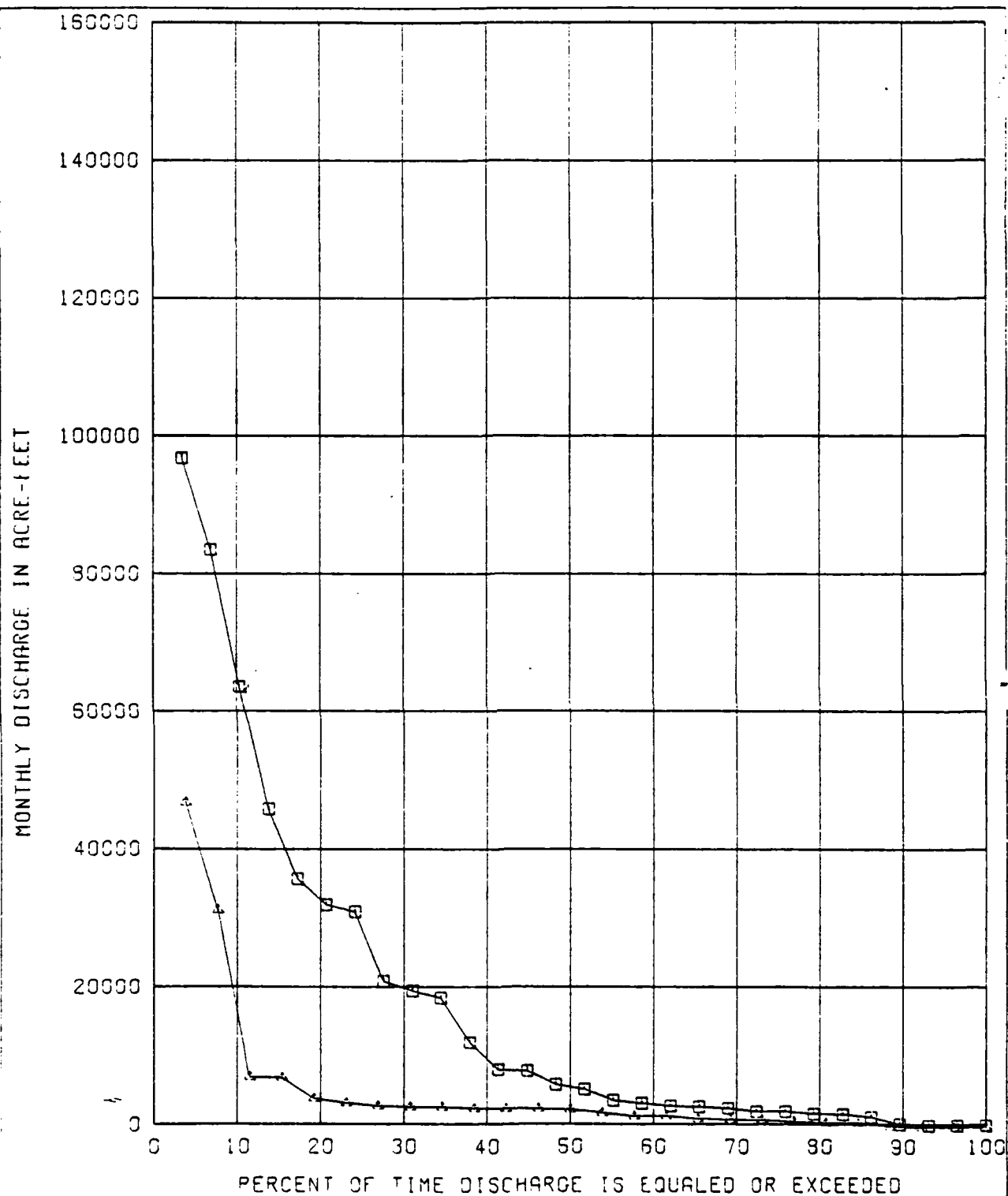
- - - POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

TRINITY RIVER BASIN, TEXAS
GRAPEVINE RESERVOIR
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
DECEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 12





LEGEND

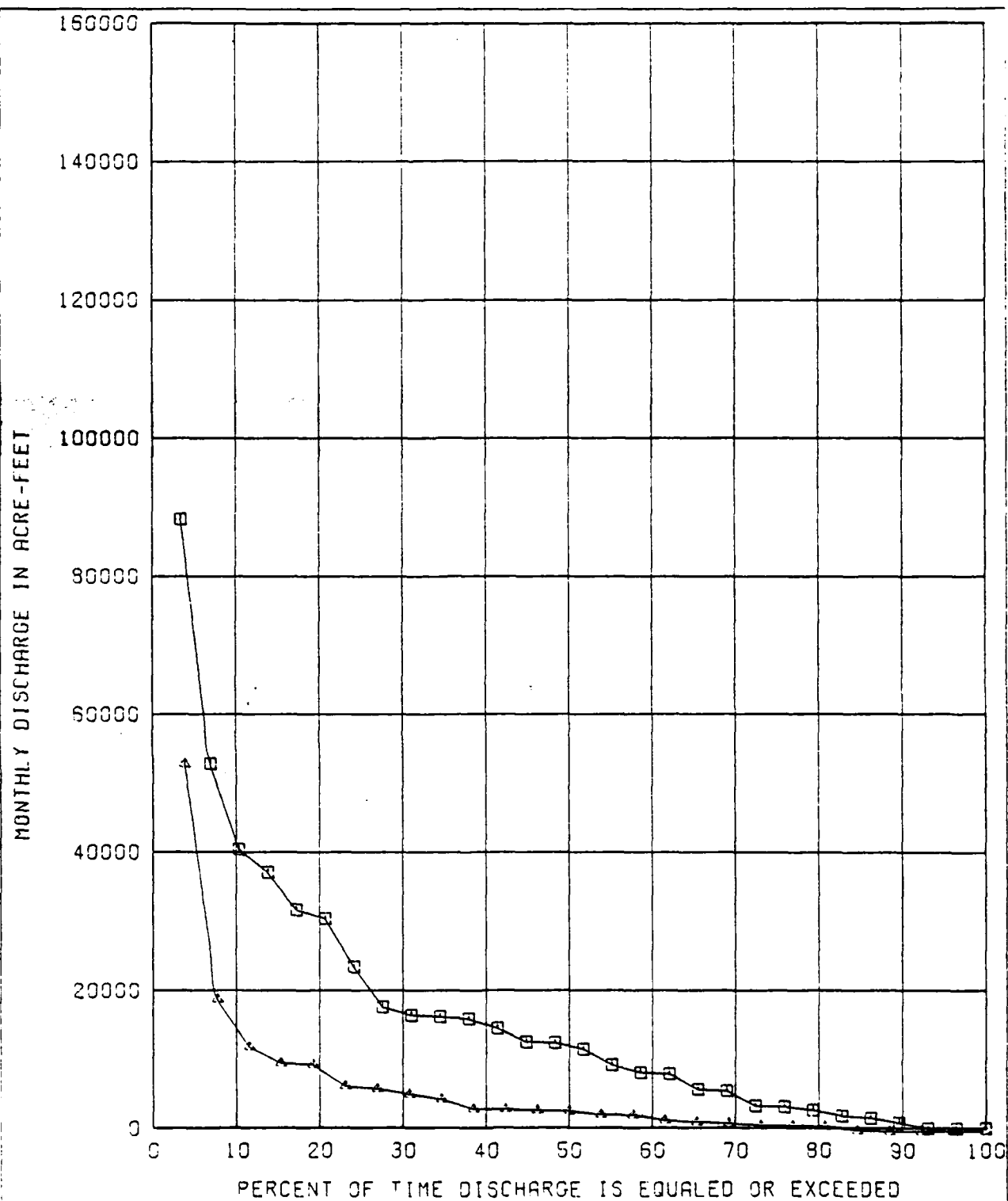
- — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1952)
- △ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

TRINITY RIVER BASIN, TEXAS
CRAPEVINE RESERVOIR

FLOW DURATION CURVES AT DAM SITE
FEBRUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 14



LEGEND

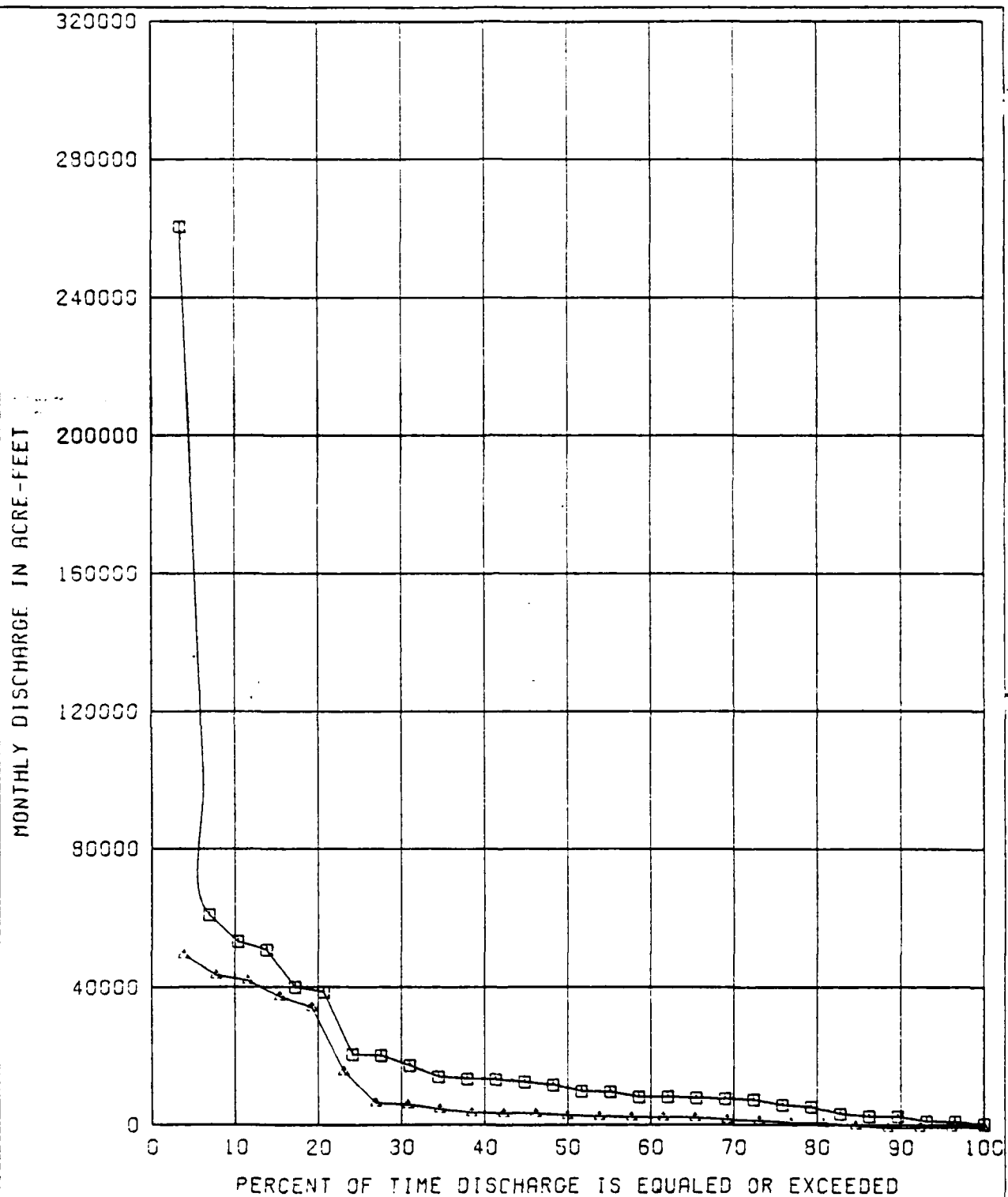
- — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1952)
- ▲ — ▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

TRINITY RIVER BASIN, TEXAS
GRAPEVINE RESERVOIR

FLOW DURATION CURVES AT DAM SITE
MARCH FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 15



LEGEND

□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1952)

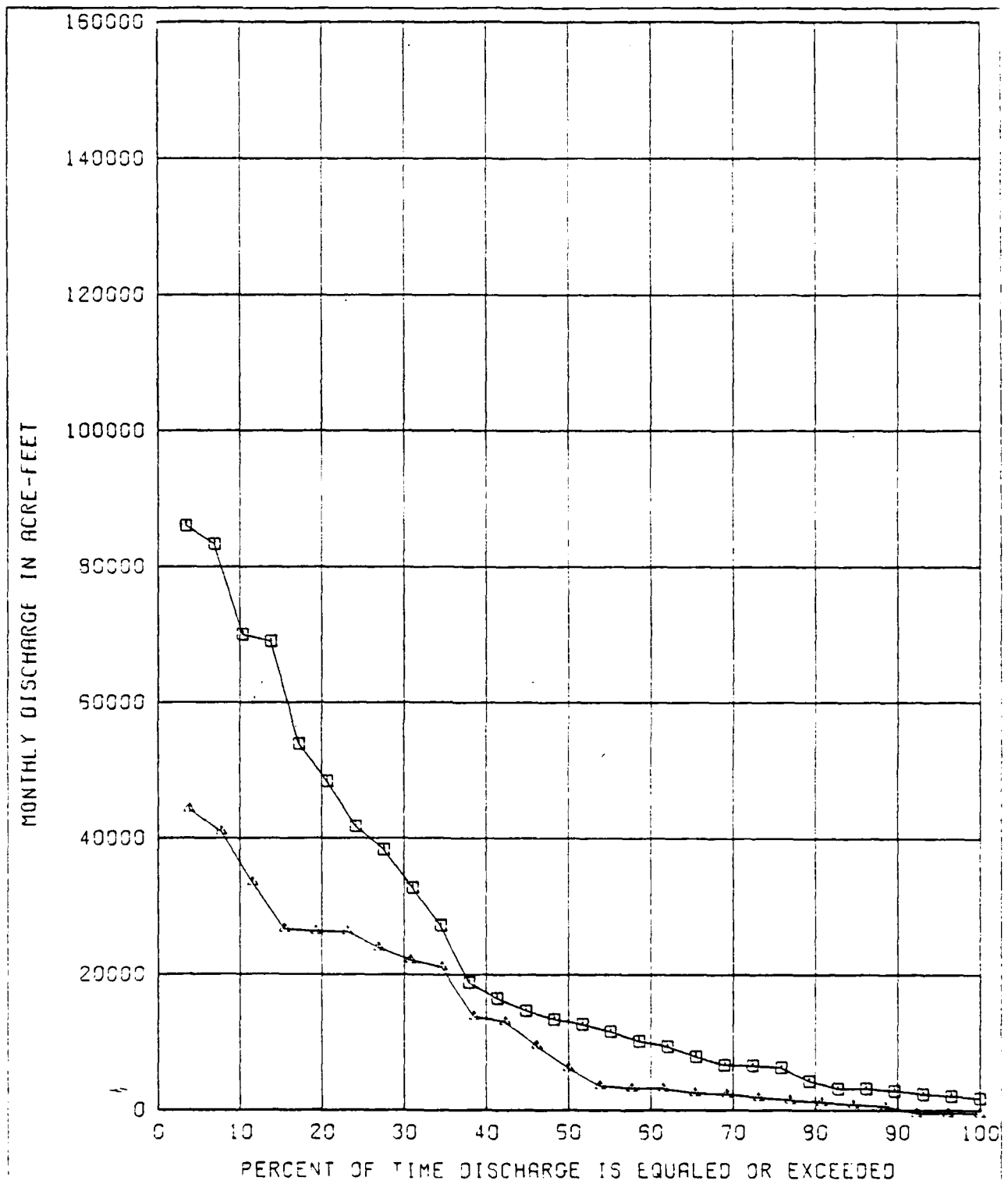
▲ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

TRINITY RIVER BASIN, TEXAS
GRAPEVINE RESERVOIR

FLOW DURATION CURVES AT DAM SITE
APRIL FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 16



LEGEND

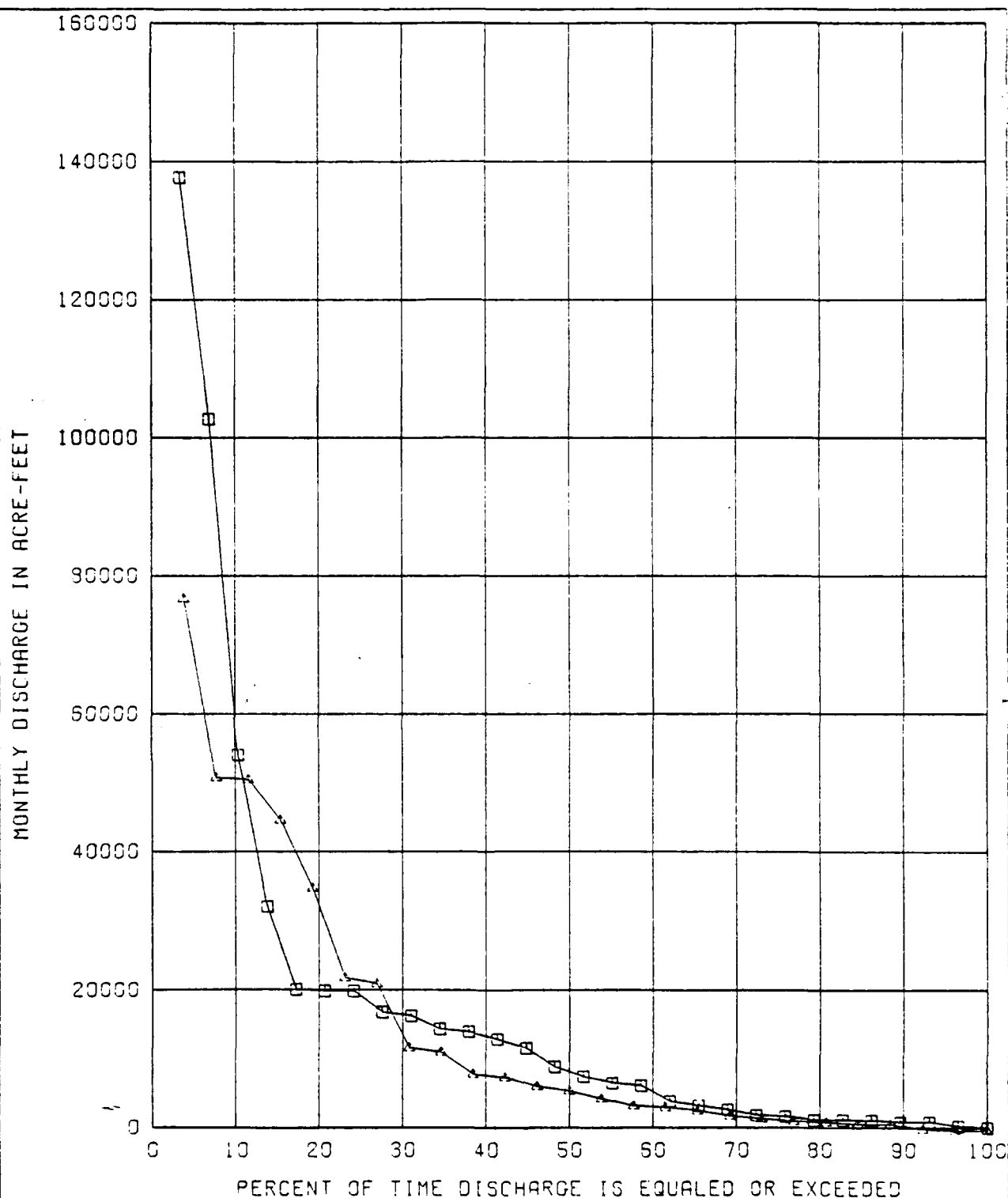
- — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1952)
- ▲ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

TRINITY RIVER BASIN, TEXAS
GRAPEVINE RESERVOIR

FLOW DURATION CURVES AT DAM SITE
MAY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 17



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1952)

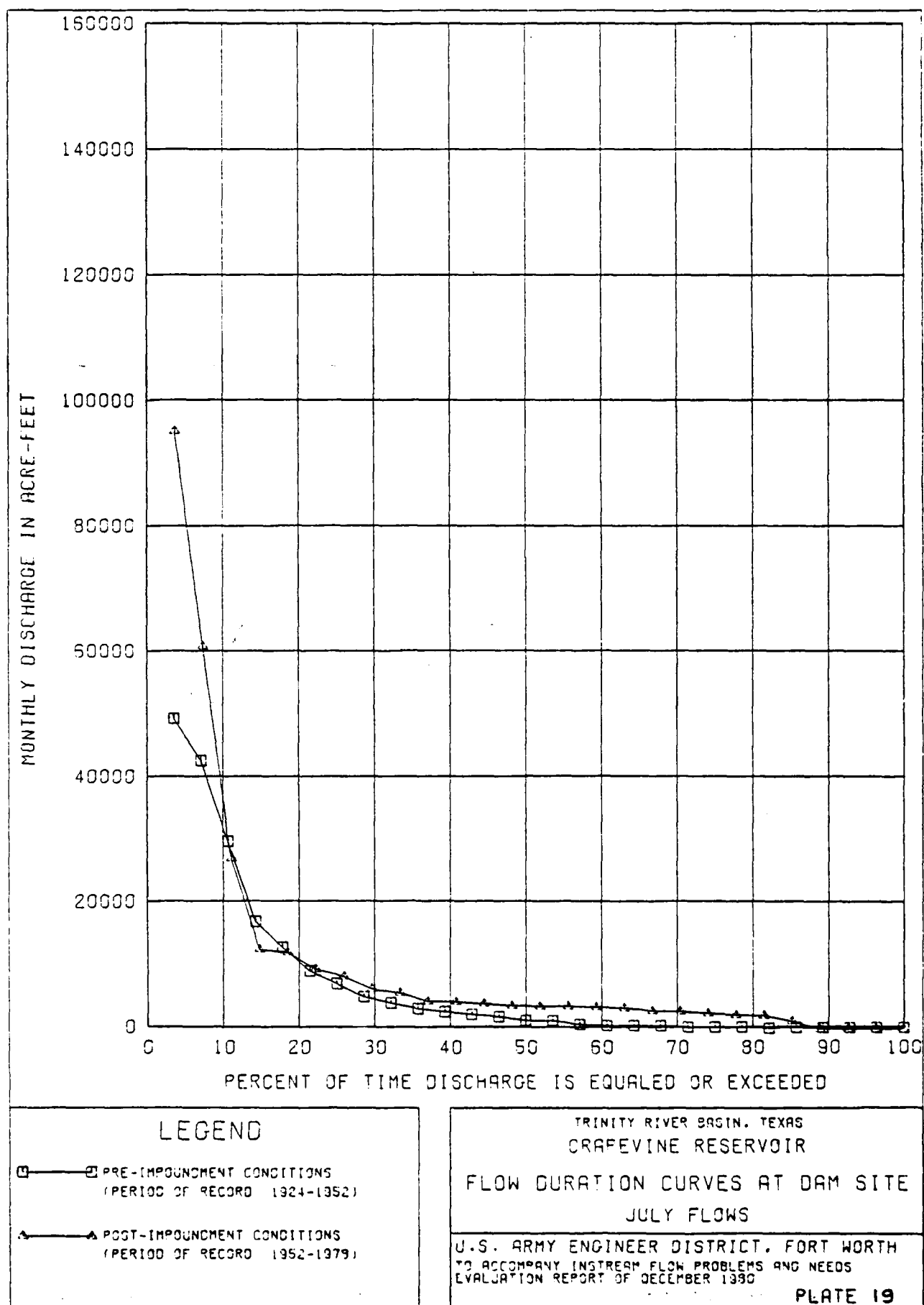
▲ — ▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

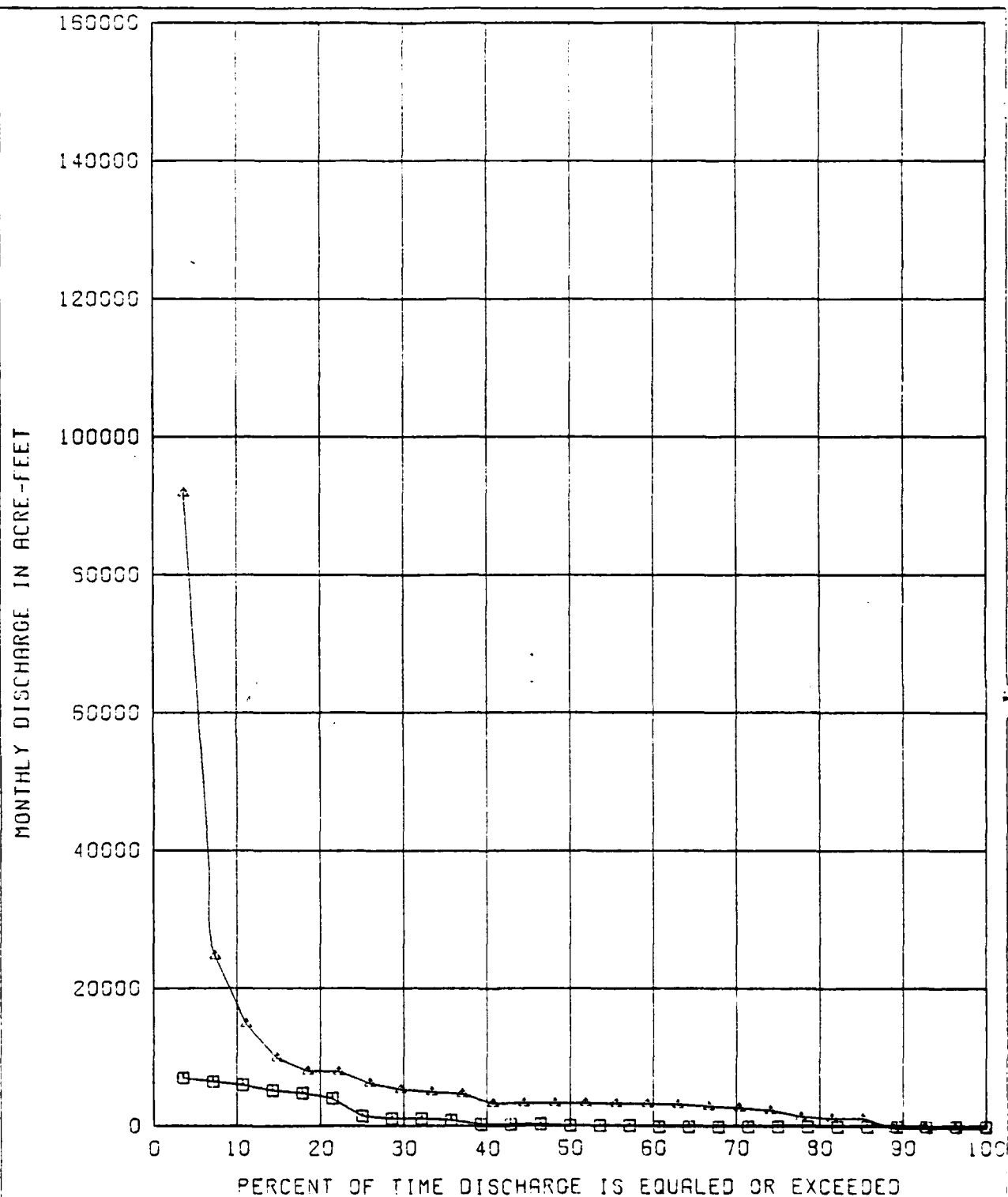
TRINITY RIVER BASIN, TEXAS
GRAPEVINE RESERVOIR

FLOW DURATION CURVES AT DAM SITE
JUNE FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 18





LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1952)

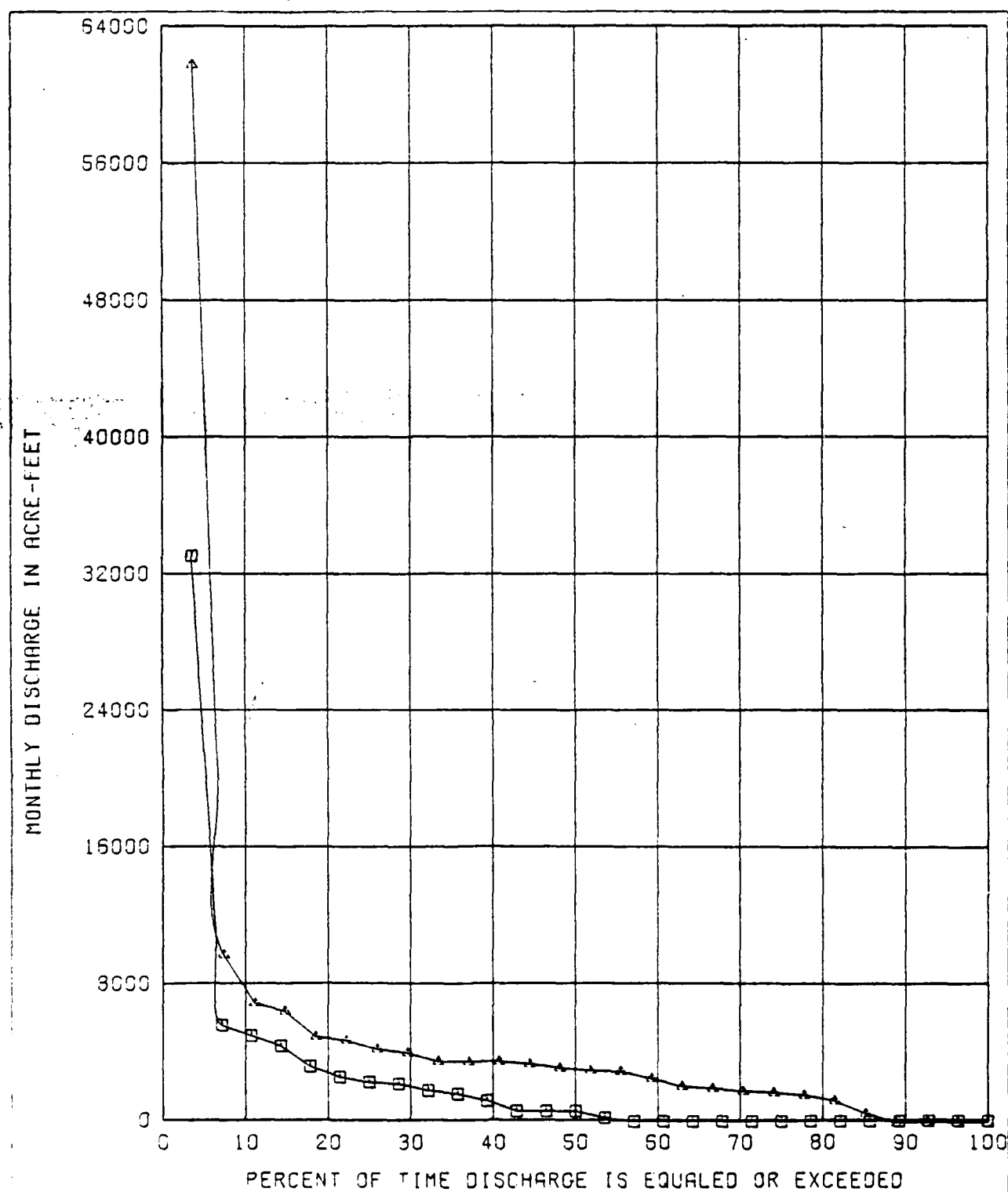
△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

TRINITY RIVER BASIN, TEXAS
GRAPEVINE RESERVOIR

FLOW DURATION CURVES AT DAM SITE
AUGUST FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 20



LEGEND

□ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1952)

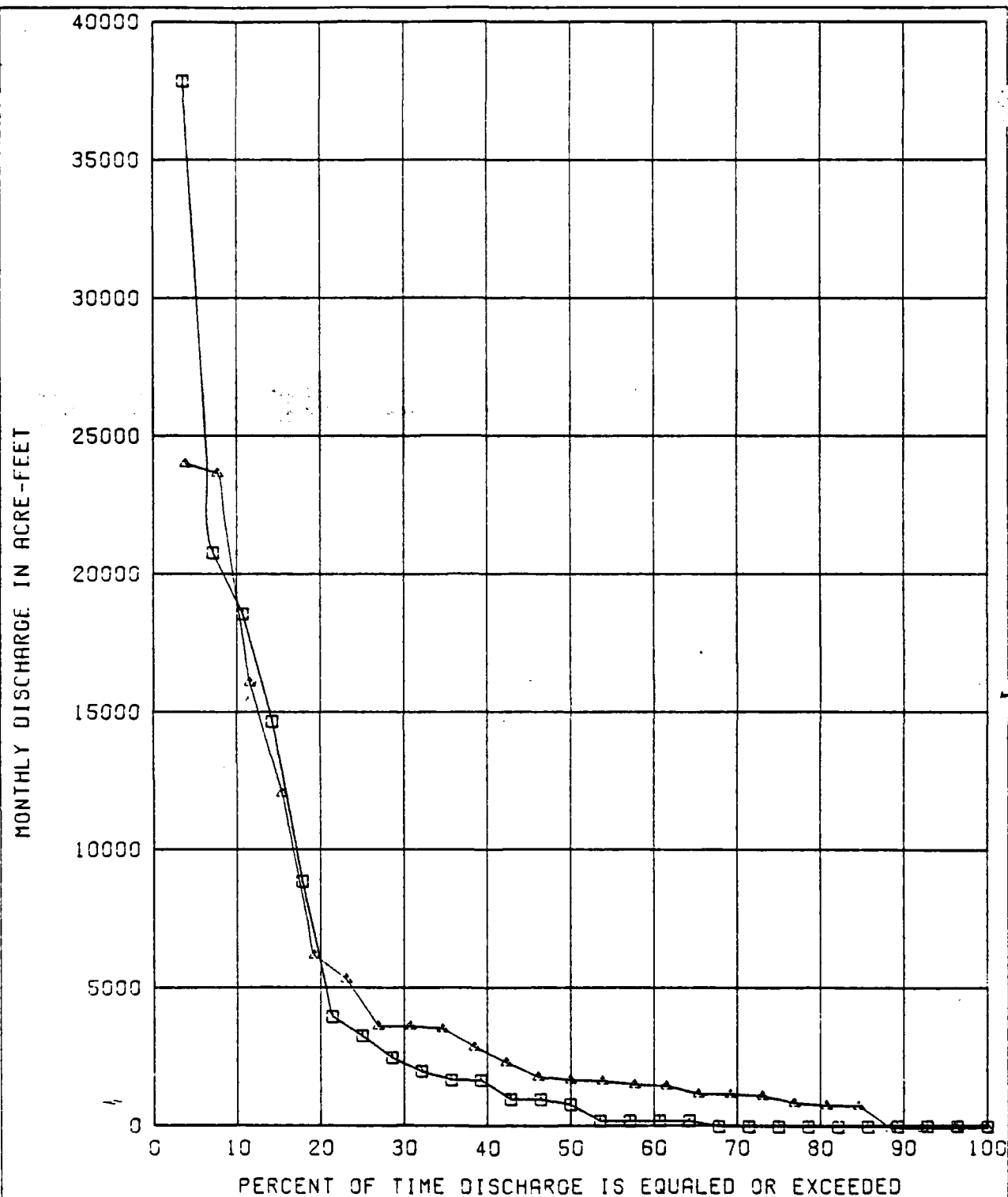
▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

TRINITY RIVER BASIN, TEXAS
GRAPEVINE RESERVOIR

FLOW DURATION CURVES AT DAM SITE
SEPTEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 21



LEGEND

□ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1952)

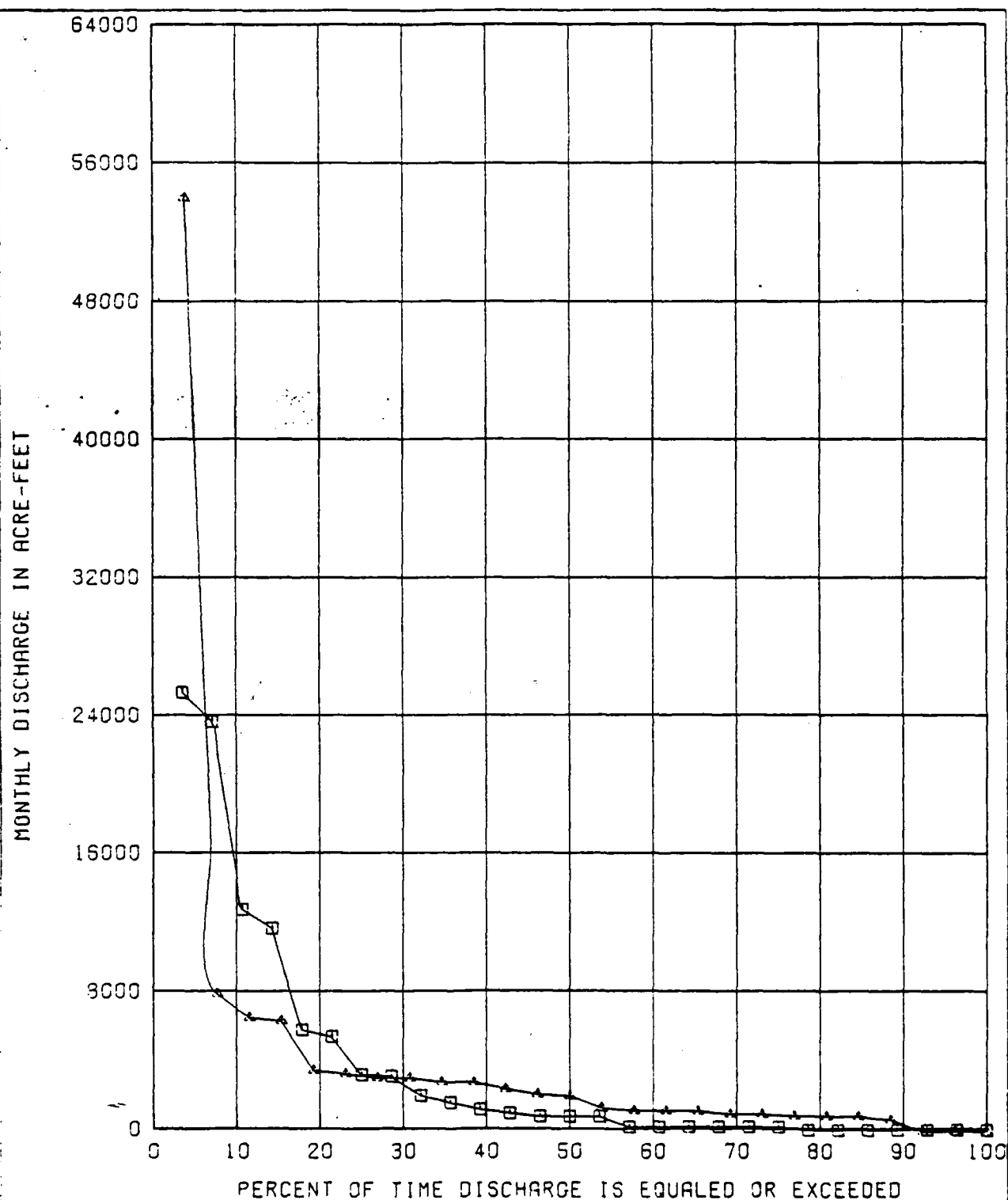
△ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

TRINITY RIVER BASIN, TEXAS
GRAPEVINE RESERVOIR

FLOW DURATION CURVES AT DAM SITE
OCTOBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 22



LEGEND

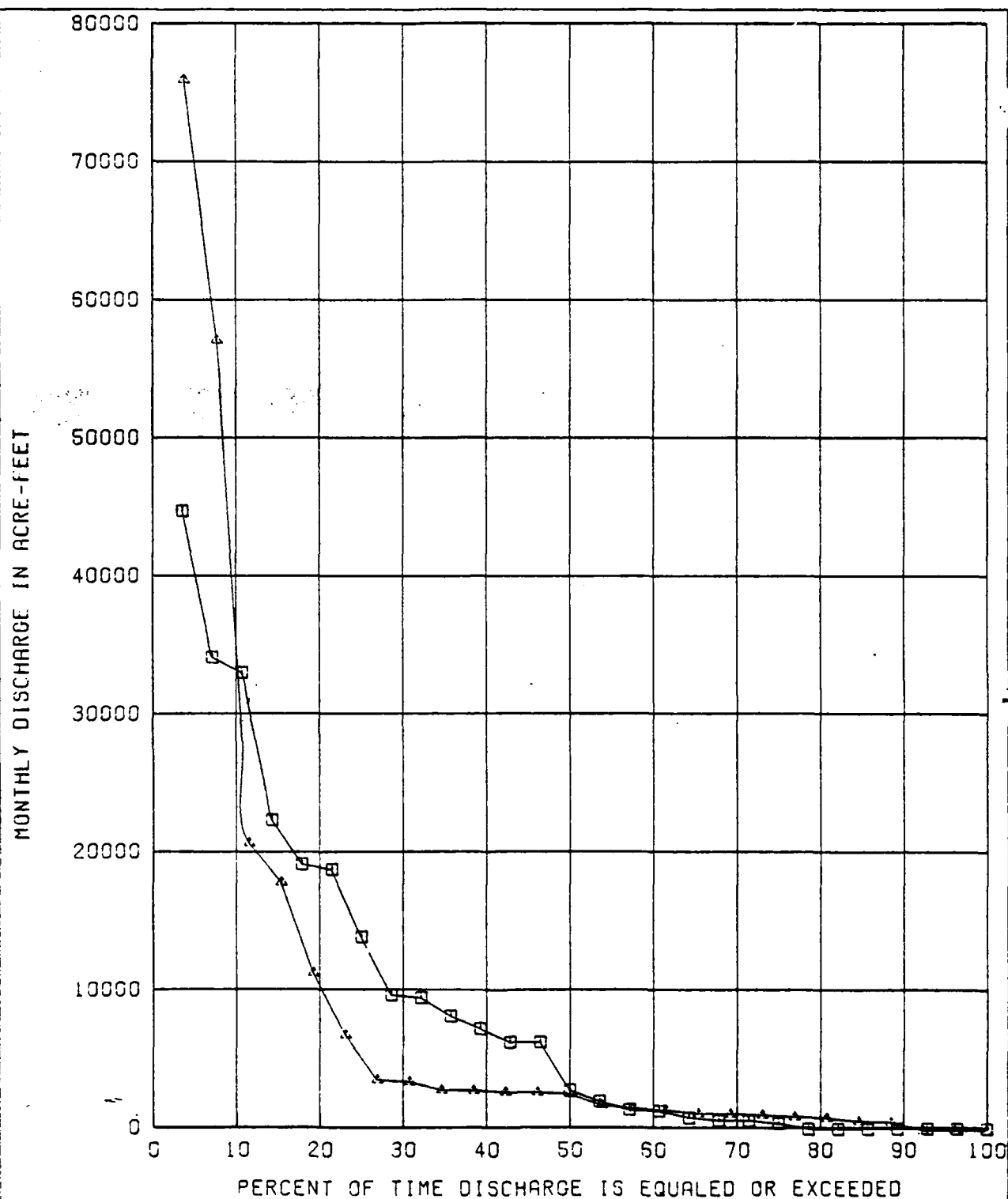
- — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1952)
- ▲ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

TRINITY RIVER BASIN, TEXAS
GRAPEVINE RESERVOIR

FLOW DURATION CURVES AT DAM SITE
NOVEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 23



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1952)

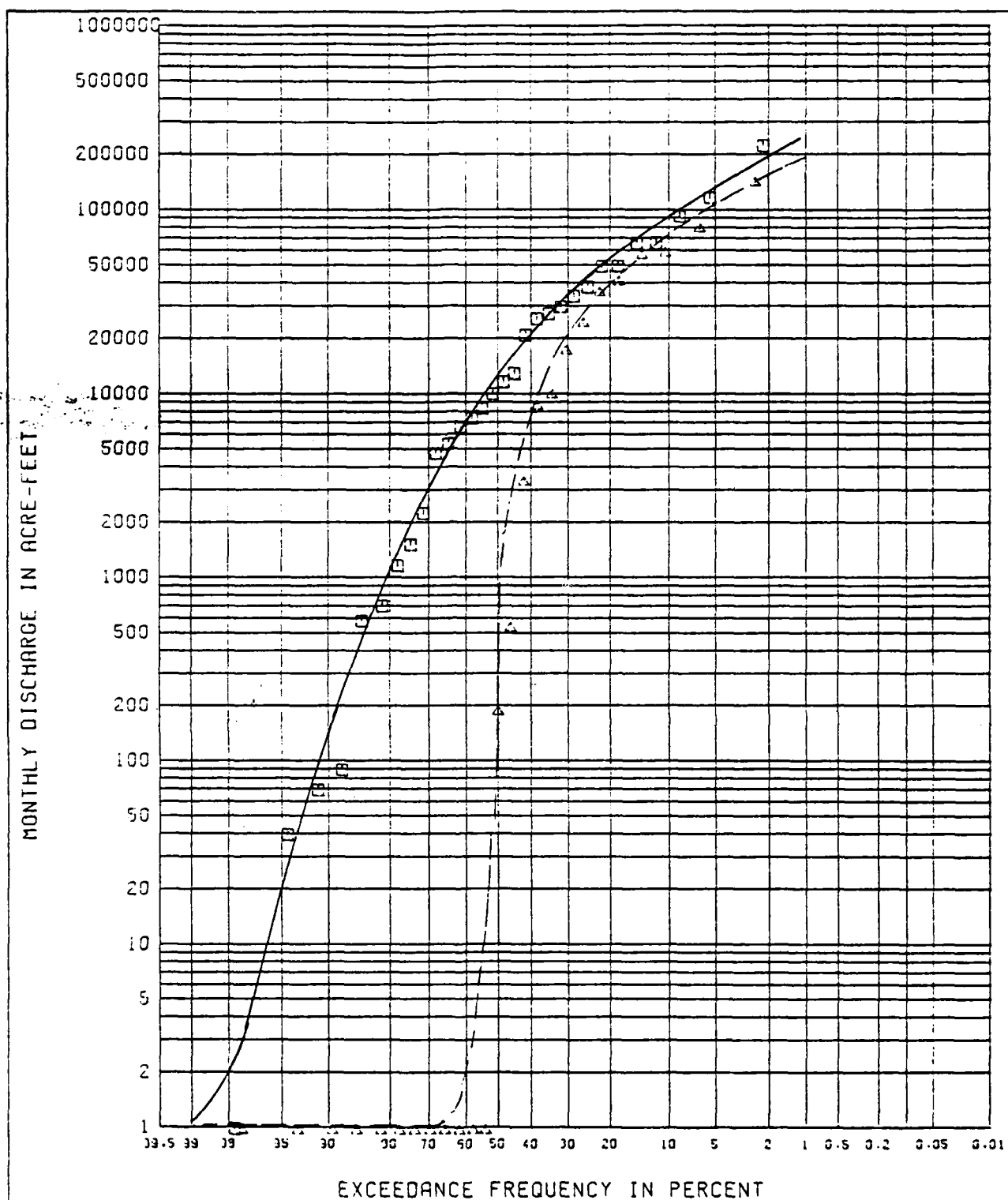
▲ — ▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

TRINITY RIVER BASIN, TEXAS
GRAPEVINE RESERVOIR

FLOW DURATION CURVES AT DAM SITE
DECEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 24



LEGEND

—■— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1953)

-▲- POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1954-1979)

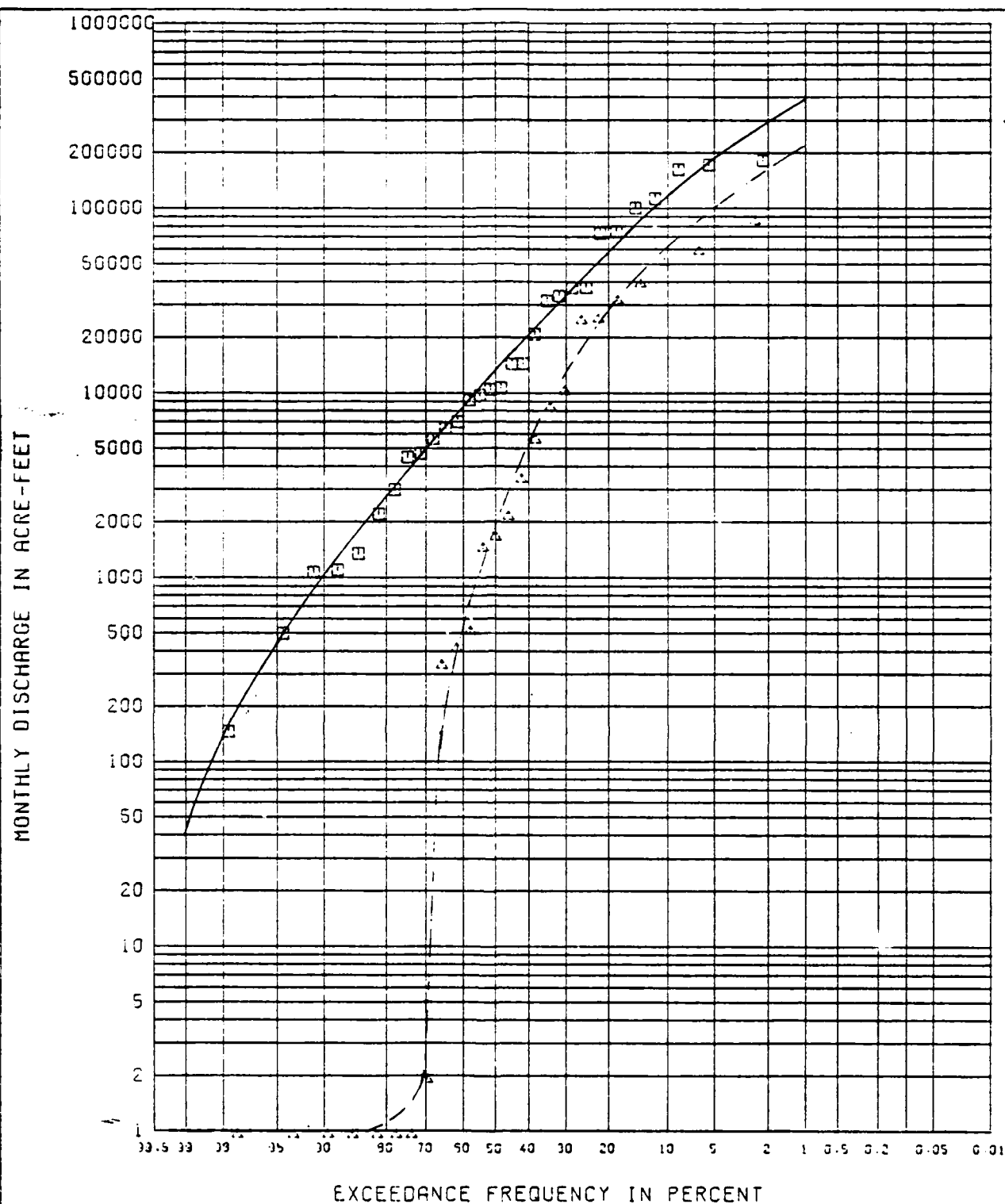
TRINITY RIVER BASIN, TEXAS

LAVON LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
JANUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE I



LEGEND

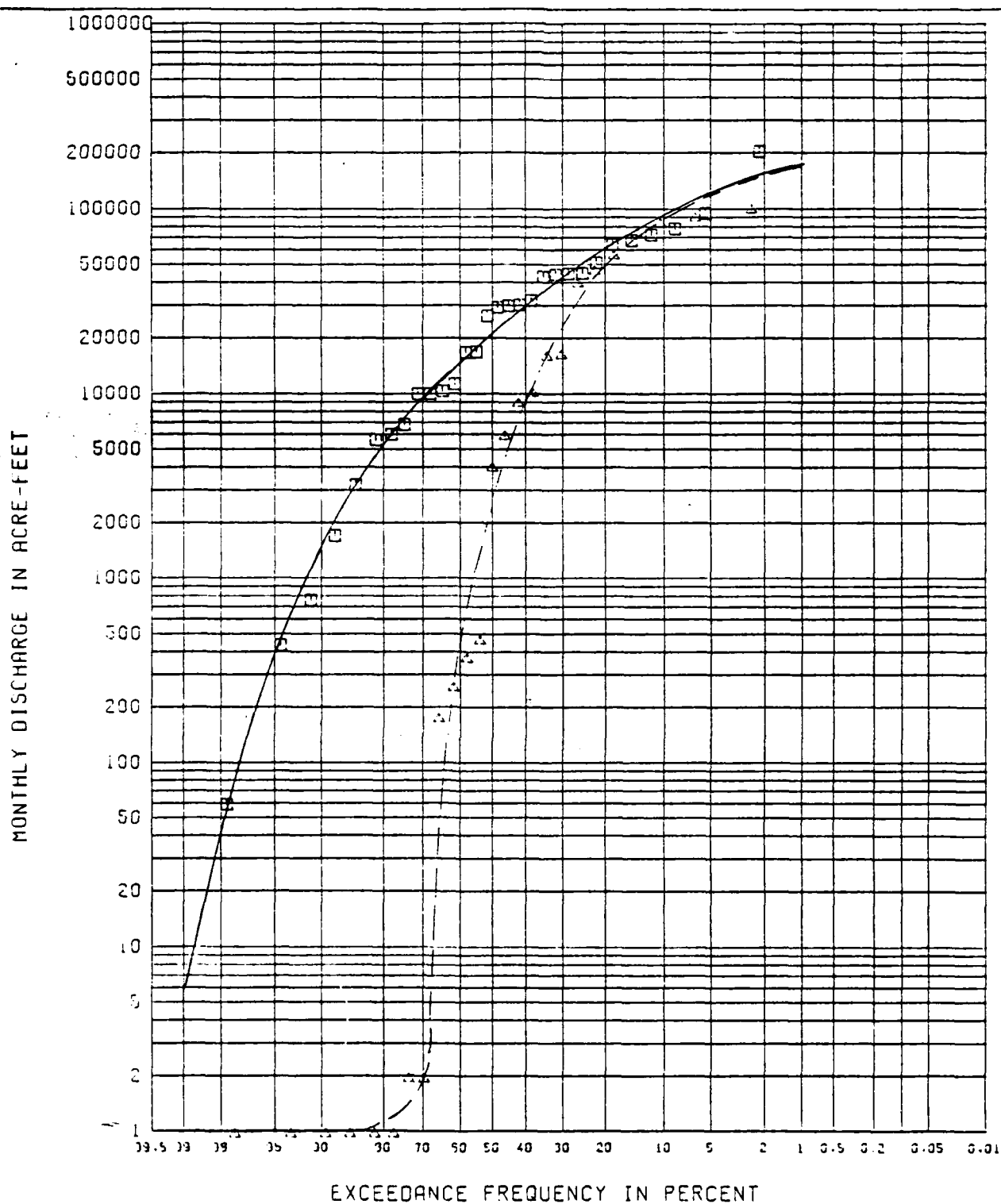
—■— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1953)

- - -△- POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1954-1979)

TRINITY RIVER BASIN, TEXAS
LAVON LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
FEBRUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 2



LEGEND

—■— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1953)

-▲- POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1954-1979)

TRINITY RIVER BASIN, TEXAS

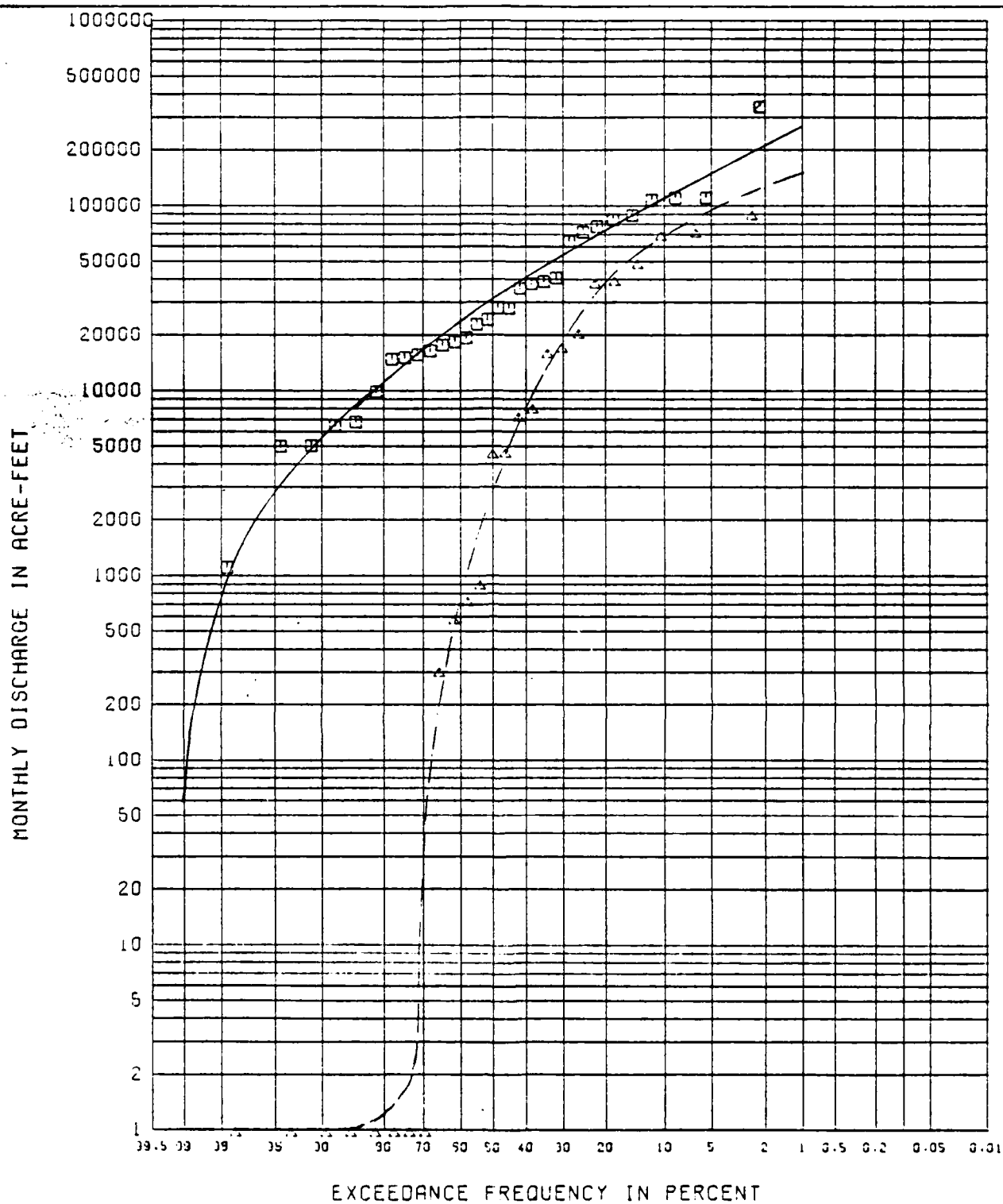
LAVON LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

MARCH FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 3



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1953)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1954-1979)

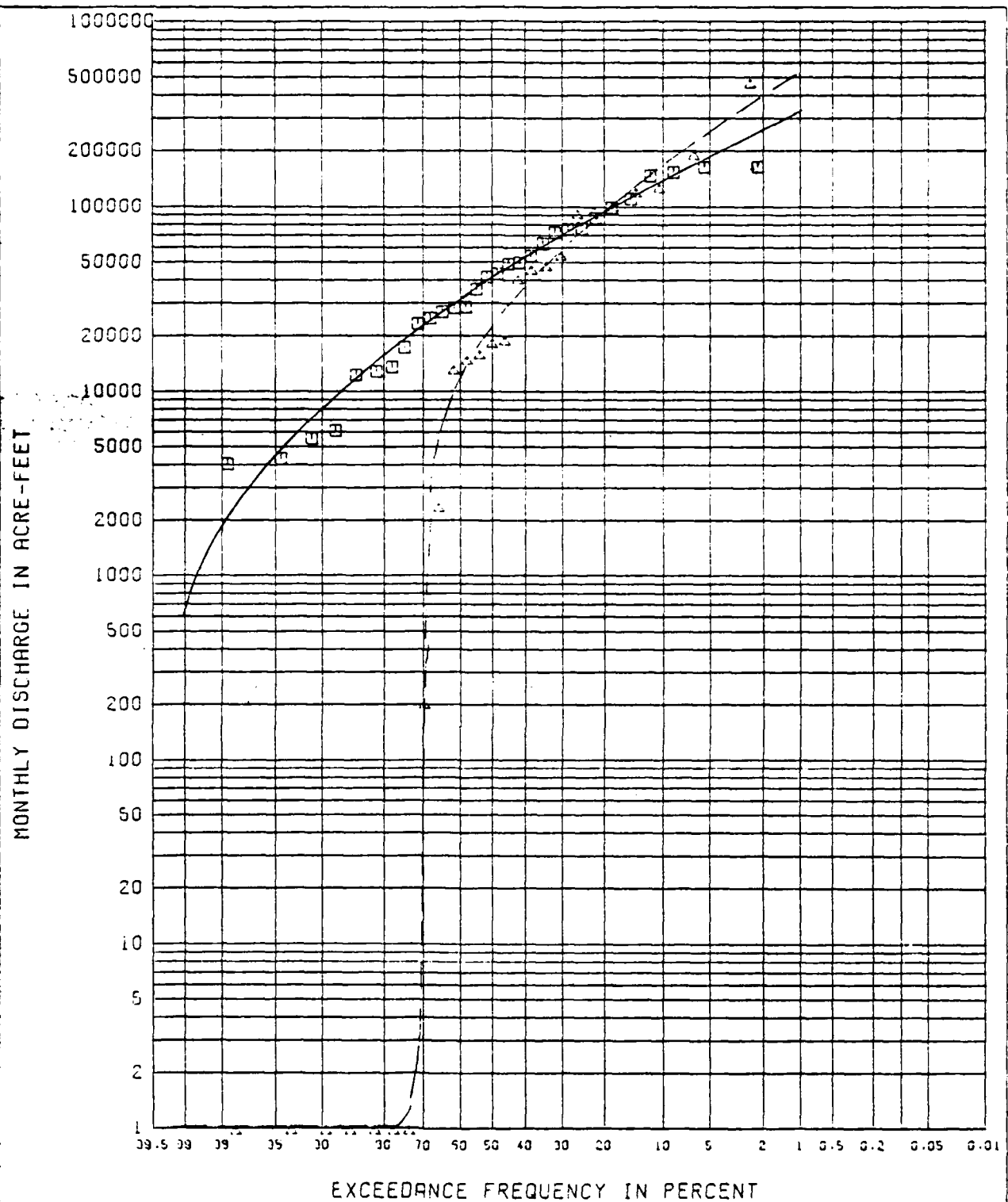
TRINITY RIVER BASIN, TEXAS

LAVON LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
APRIL FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 4



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1953)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1954-1979)

TRINITY RIVER BASIN, TEXAS

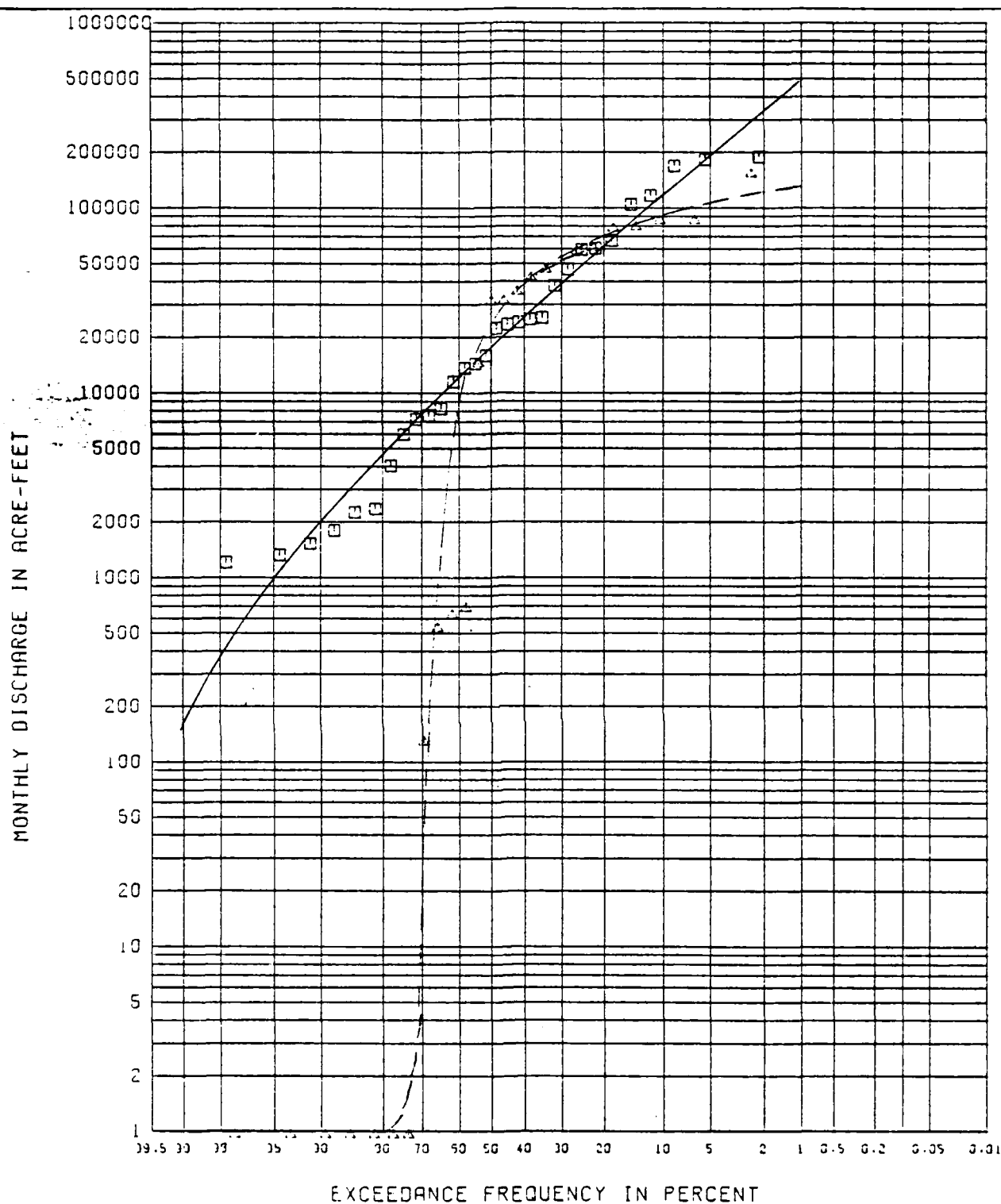
LAVON LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

MAY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 5



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1953)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1954-1979)

TRINITY RIVER BASIN, TEXAS

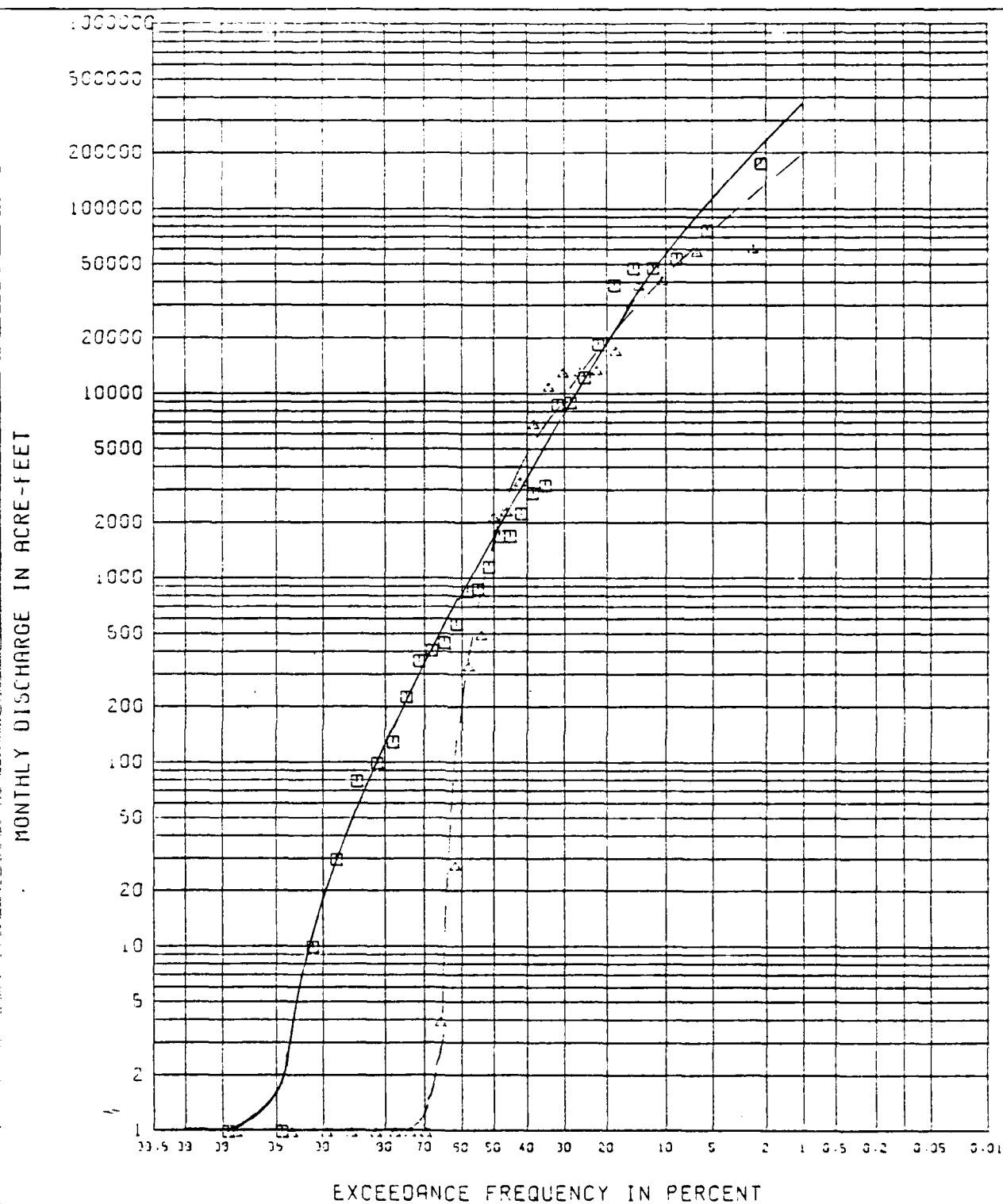
LAVON LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

JUNE FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 6



LEGEND

— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1953)

- - - POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1954-1979)

TRINITY RIVER BASIN, TEXAS

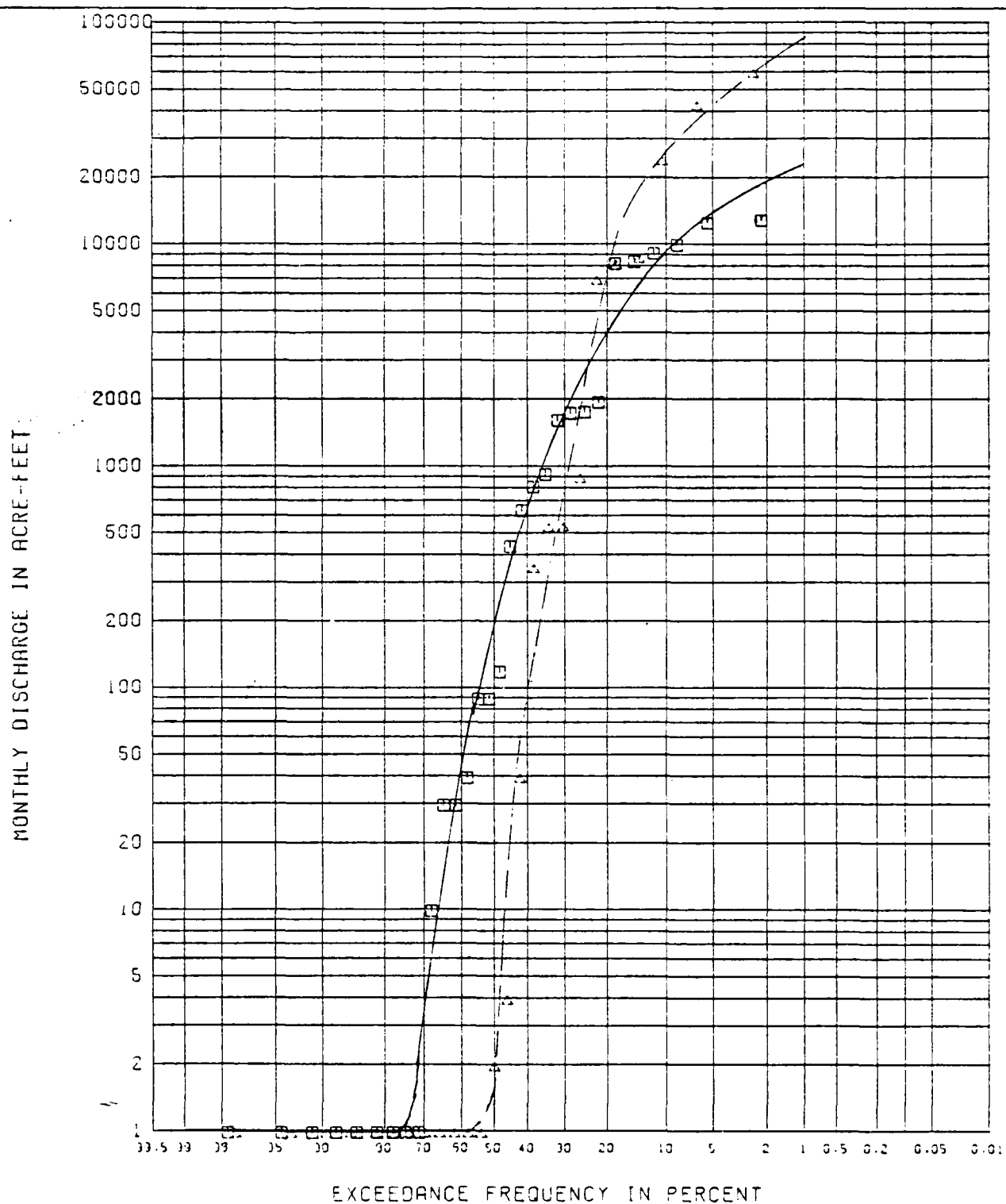
LAVON LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

JULY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 7



LEGEND

□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1953)

△ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1954-1979)

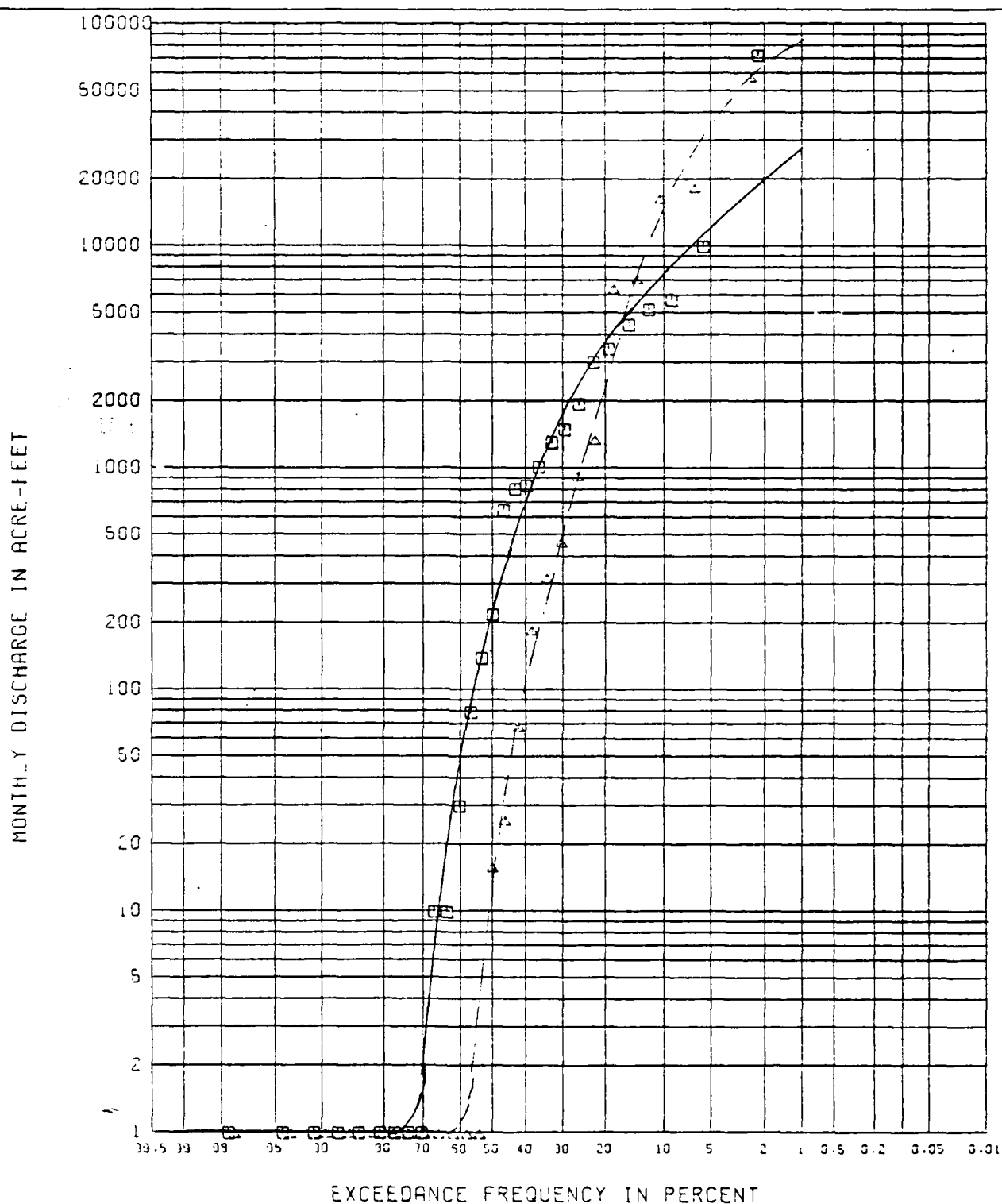
TRINITY RIVER BASIN, TEXAS

LAVON LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
AUGUST FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 8



LEGEND

- □ — PRE-IMPOUNDMENT CONDITIONS
 (PERIOD OF RECORD 1924-1953)
- - △ - - POST-IMPOUNDMENT CONDITIONS
 (PERIOD OF RECORD 1954-1979)

TRINITY RIVER BASIN, TEXAS

LAVON LAKE

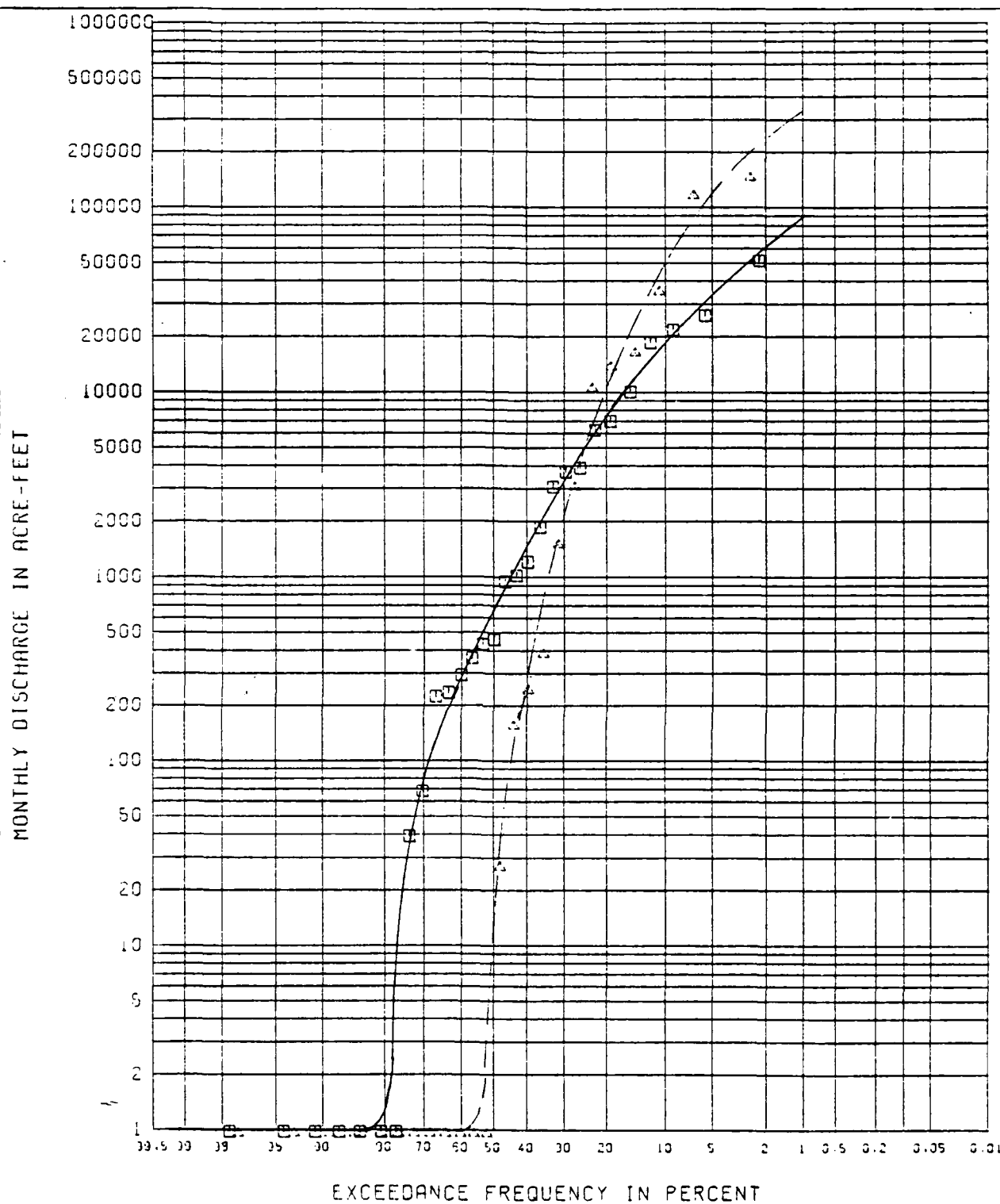
DISCHARGE-FREQUENCY RELATIONS

AT DAM SITE

SEPTEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
 TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
 EVALUATION REPORT OF DECEMBER 1980

PLATE 9



LEGEND

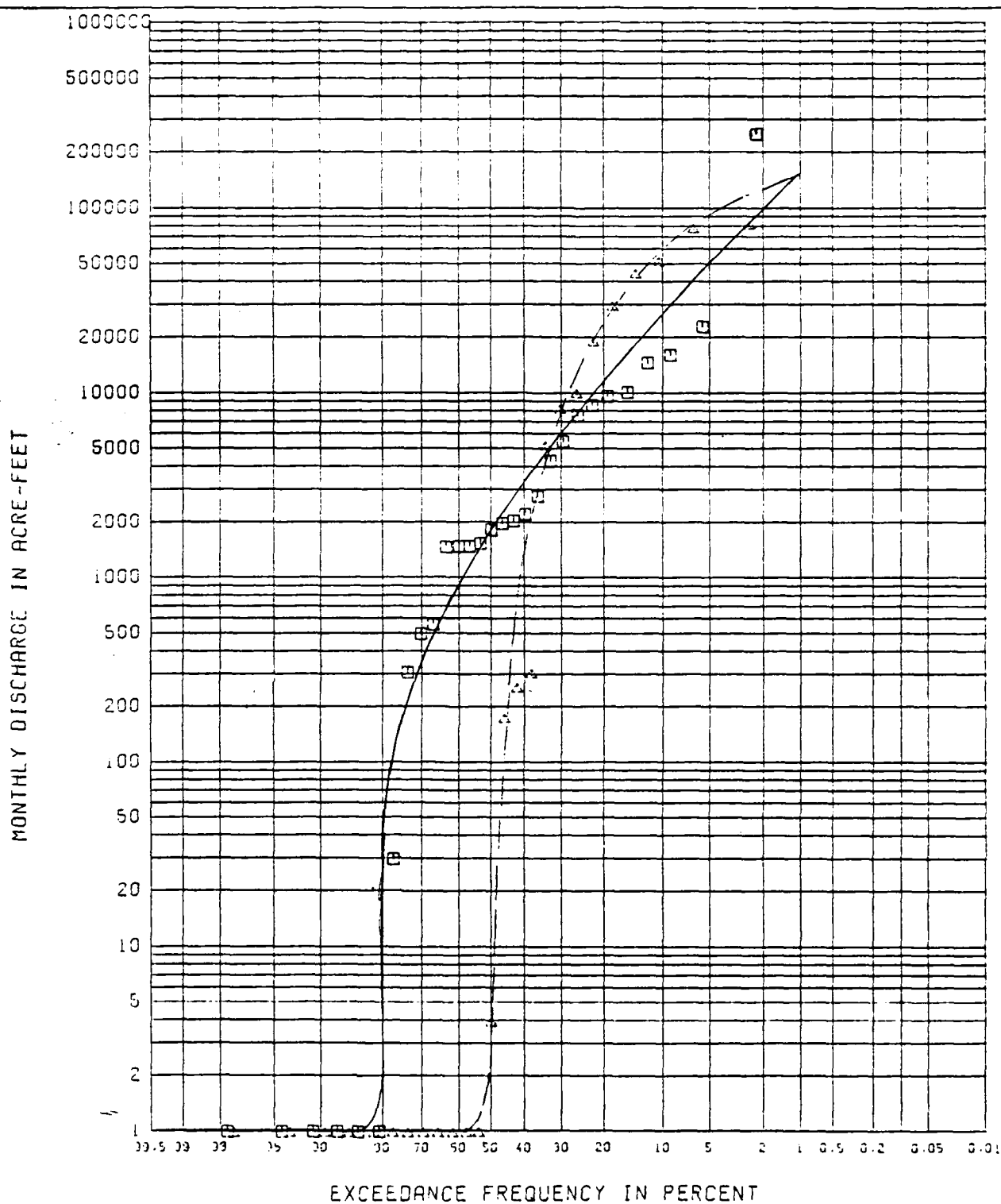
□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1953)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1954-1979)

TRINITY RIVER BASIN, TEXAS
LAVON LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
OCTOBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 10



LEGEND

—■— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1953)

- - -△- POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1954-1979)

TRINITY RIVER BASIN, TEXAS

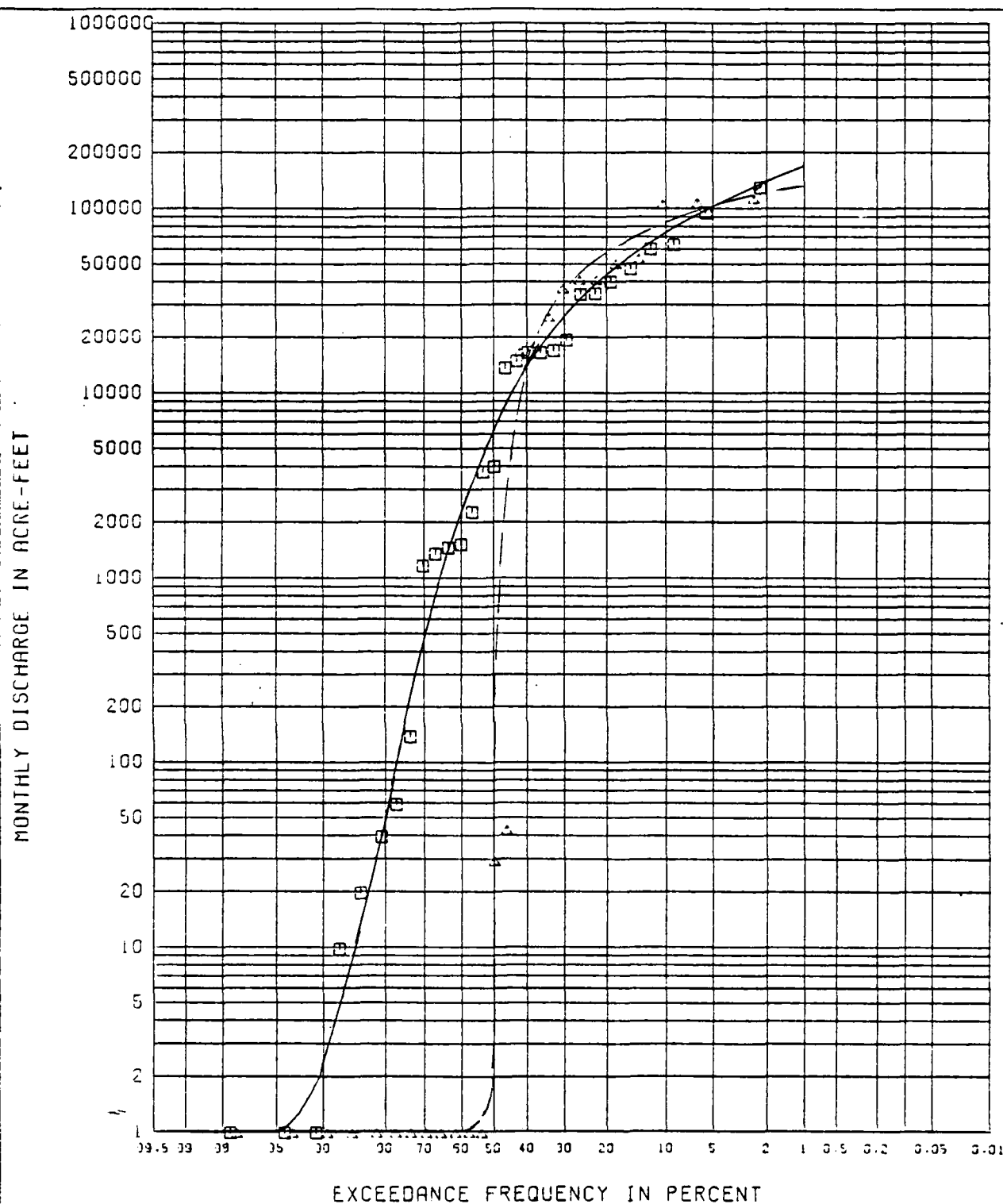
LAVON LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

NOVEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 11



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1953)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1954-1979)

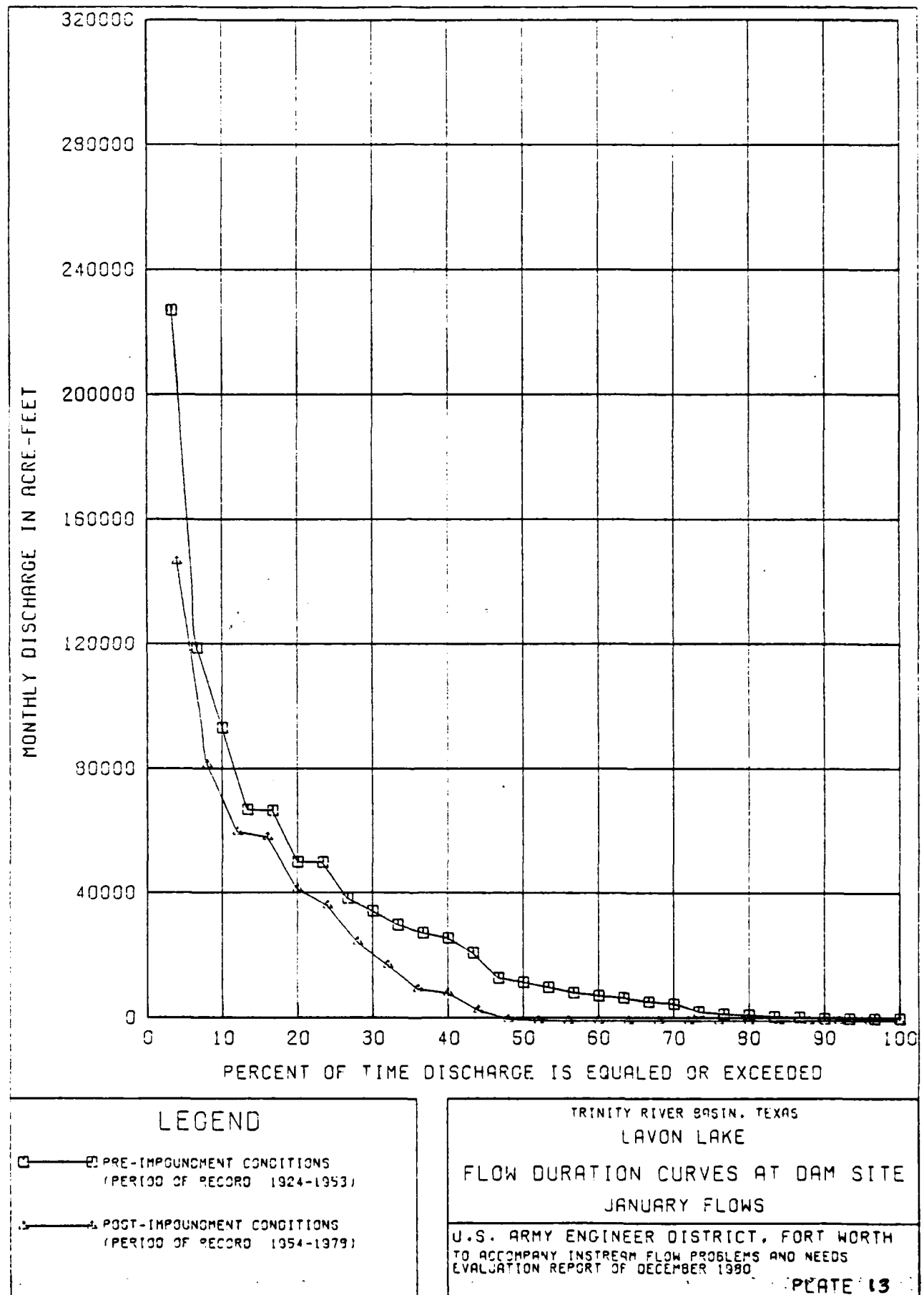
TRINITY RIVER BASIN, TEXAS

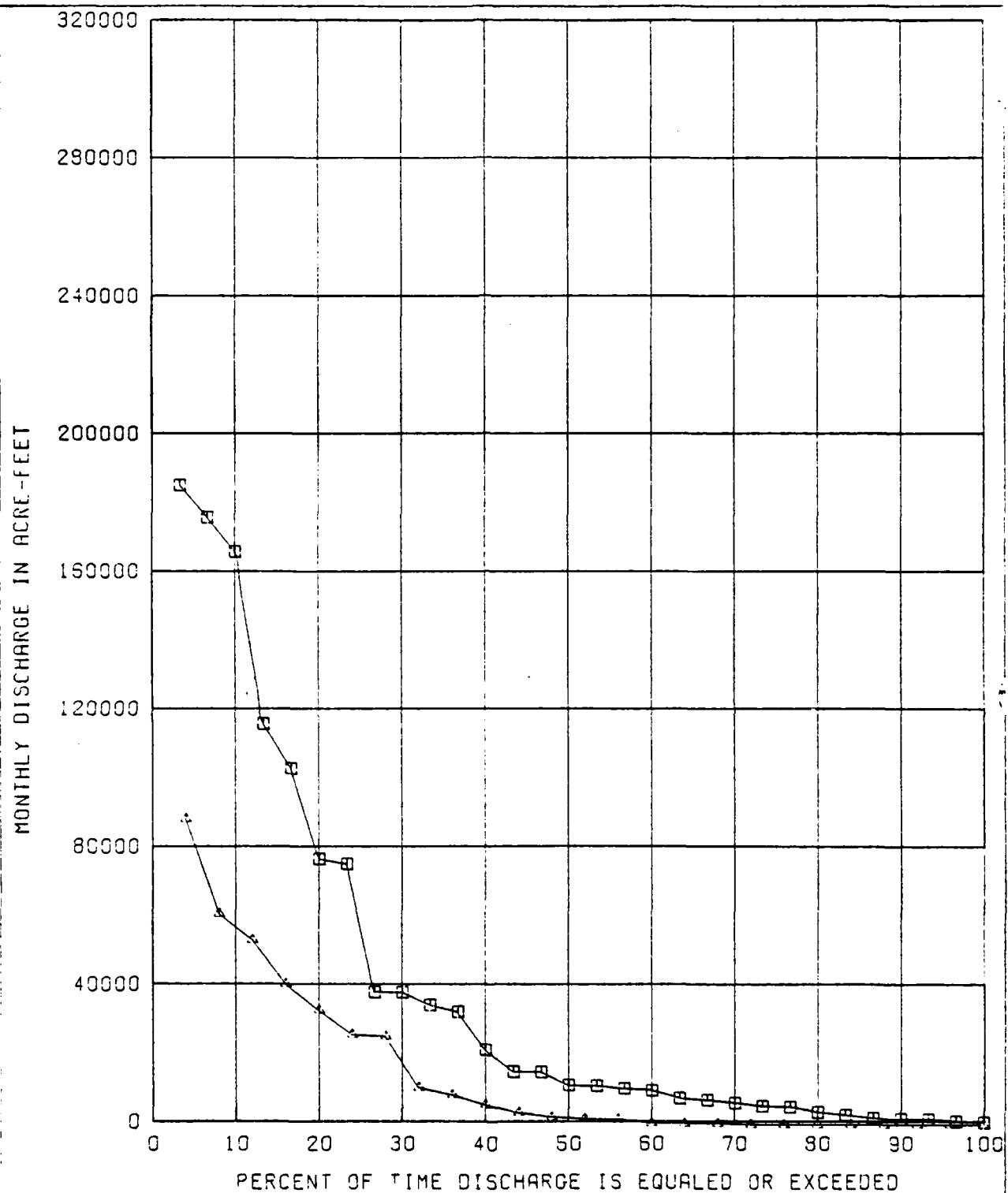
LAVON LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
DECEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 12





LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1953)

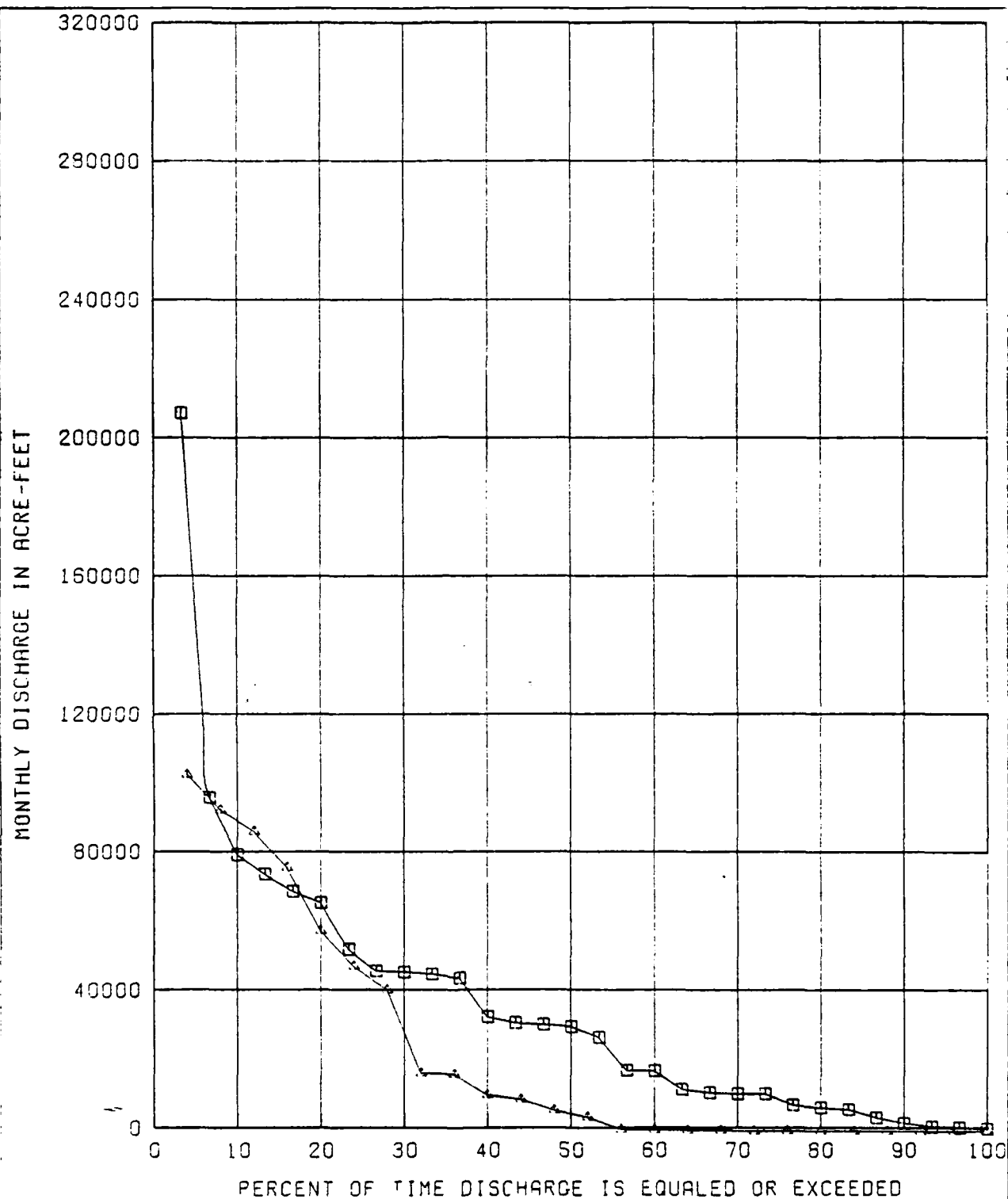
△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1954-1979)

TRINITY RIVER BASIN, TEXAS
LAVON LAKE

FLOW DURATION CURVES AT DAM SITE
FEBRUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 14



LEGEND

□ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1953)

△ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1954-1979)

TRINITY RIVER BASIN, TEXAS

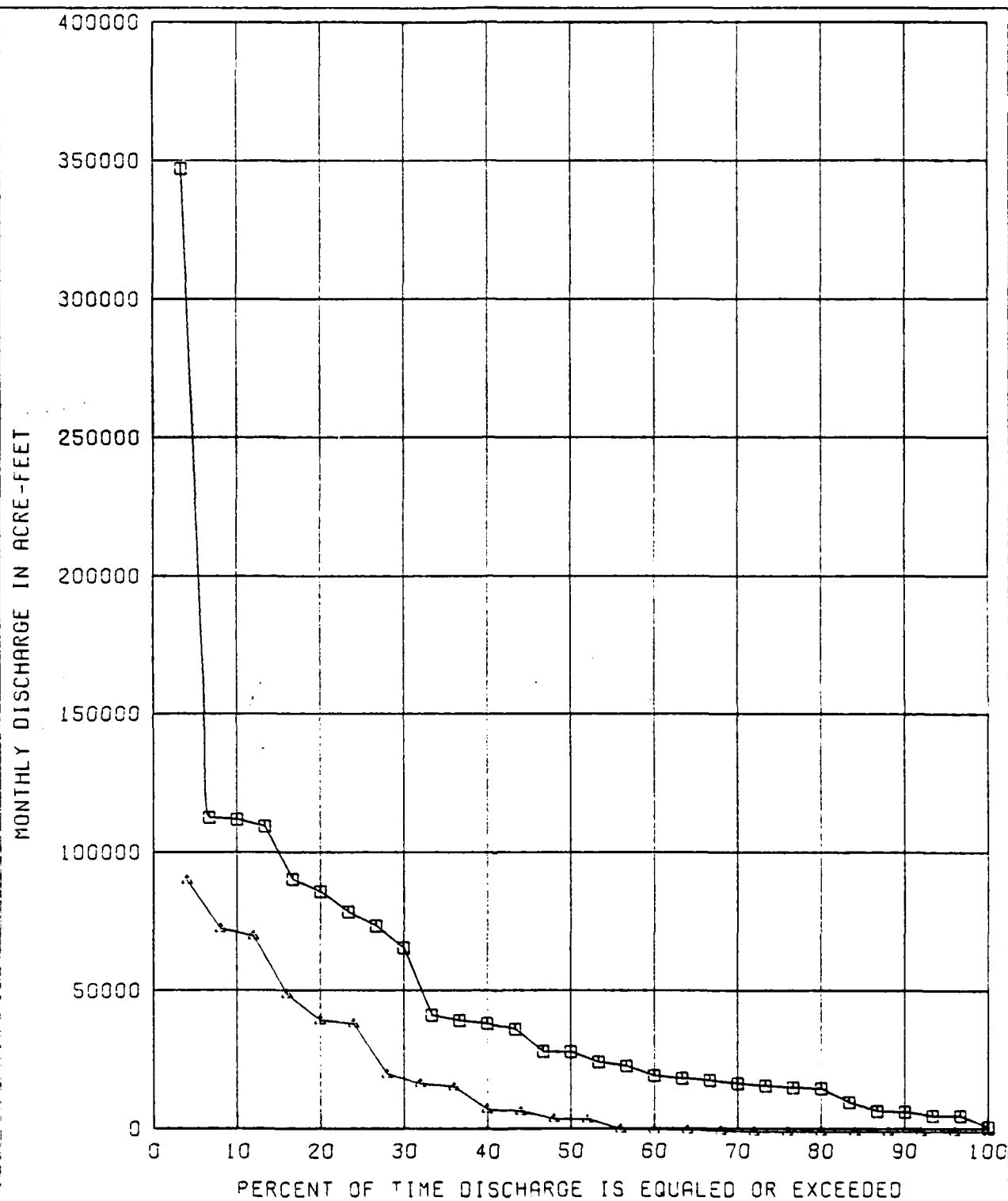
LAVON LAKE

FLOW DURATION CURVES AT DAM SITE

MARCH FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 15



LEGEND

—□— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1953)

—▲— POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1954-1979)

TRINITY RIVER BASIN, TEXAS

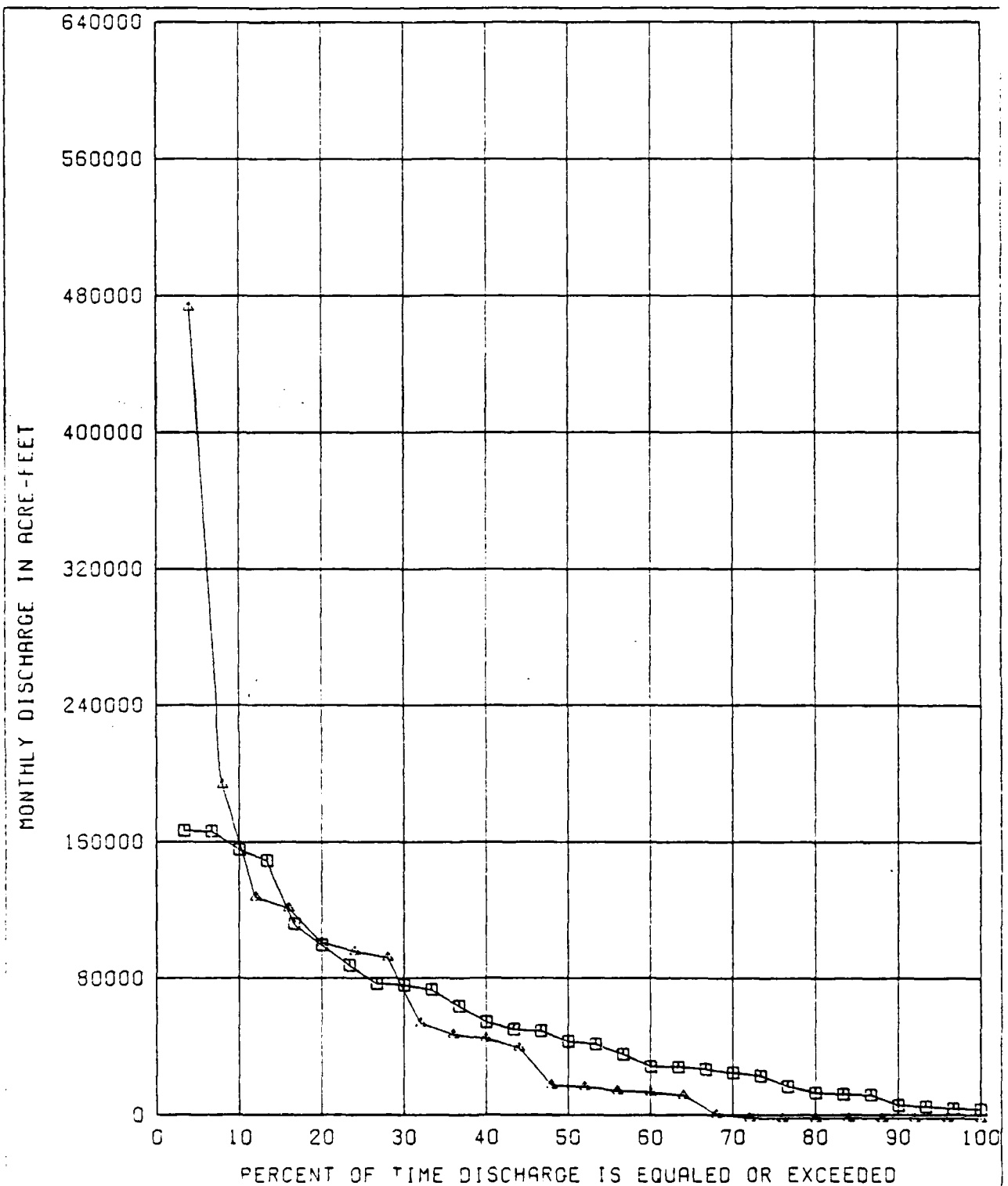
LAVON LAKE

FLOW DURATION CURVES AT DAM SITE

APRIL FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 16



LEGEND

□ — PRE-IMPONDMENT CONDITIONS
(PERIOD OF RECORD 1924-1953)

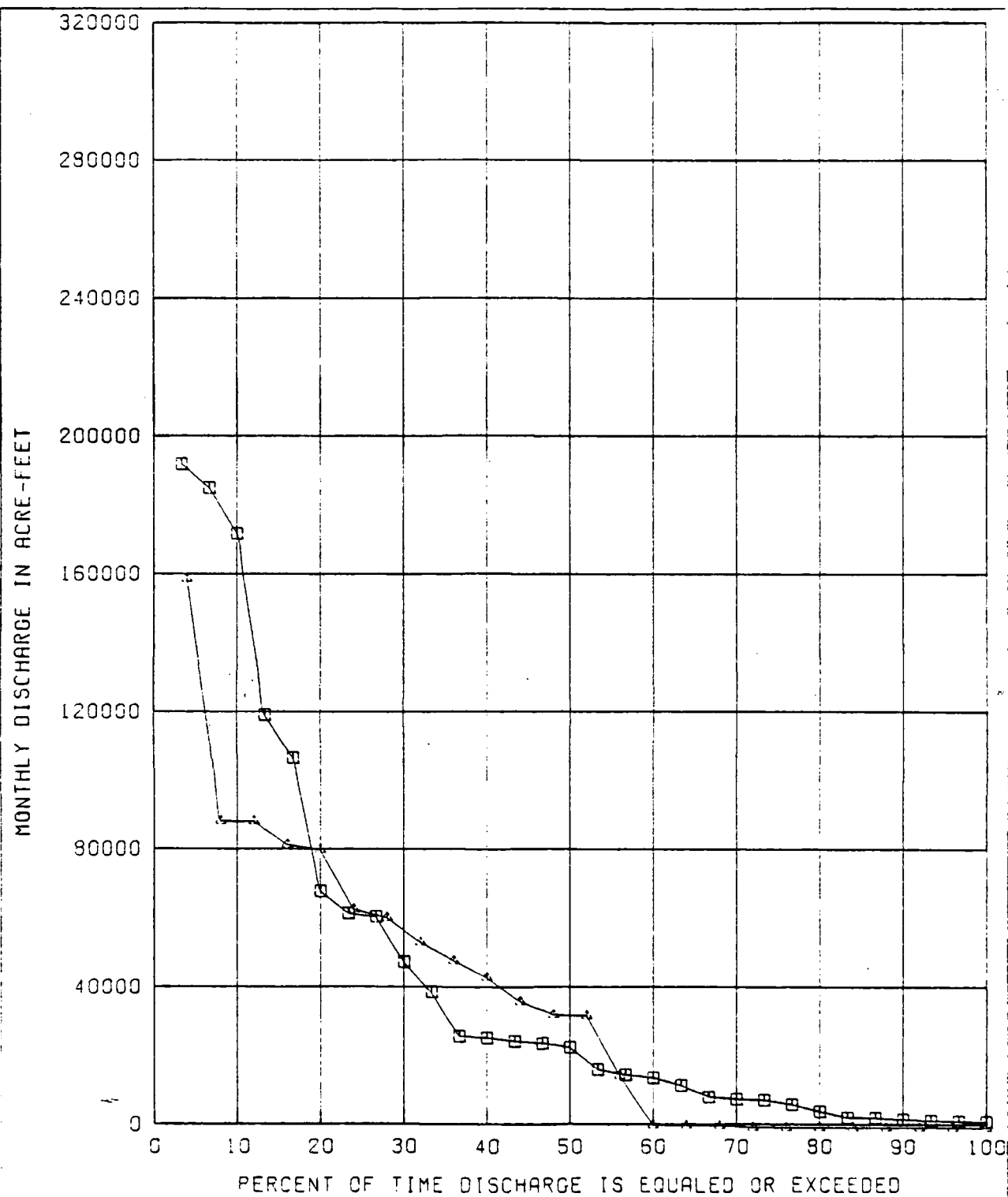
△ — POST-IMPONDMENT CONDITIONS
(PERIOD OF RECORD 1954-1979)

TRINITY RIVER BASIN, TEXAS
LAVON LAKE

FLOW DURATION CURVES AT DAM SITE
MAY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 17



LEGEND

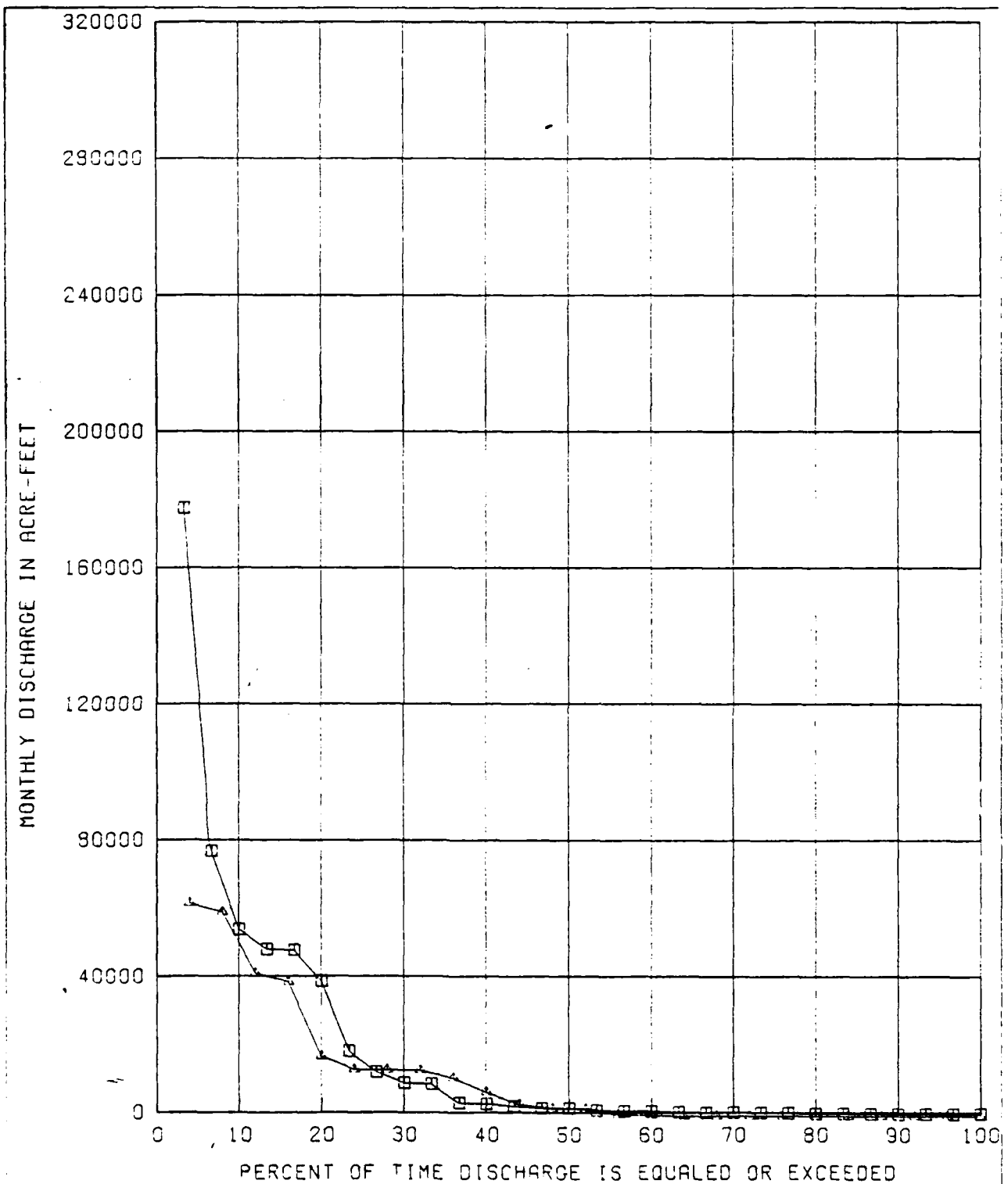
- — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1953)
- △ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1954-1973)

TRINITY RIVER BASIN, TEXAS
LAVON LAKE

FLOW DURATION CURVES AT DAM SITE
JUNE FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 18



LEGEND

□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1953)

▲ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1954-1979)

TRINITY RIVER BASIN, TEXAS

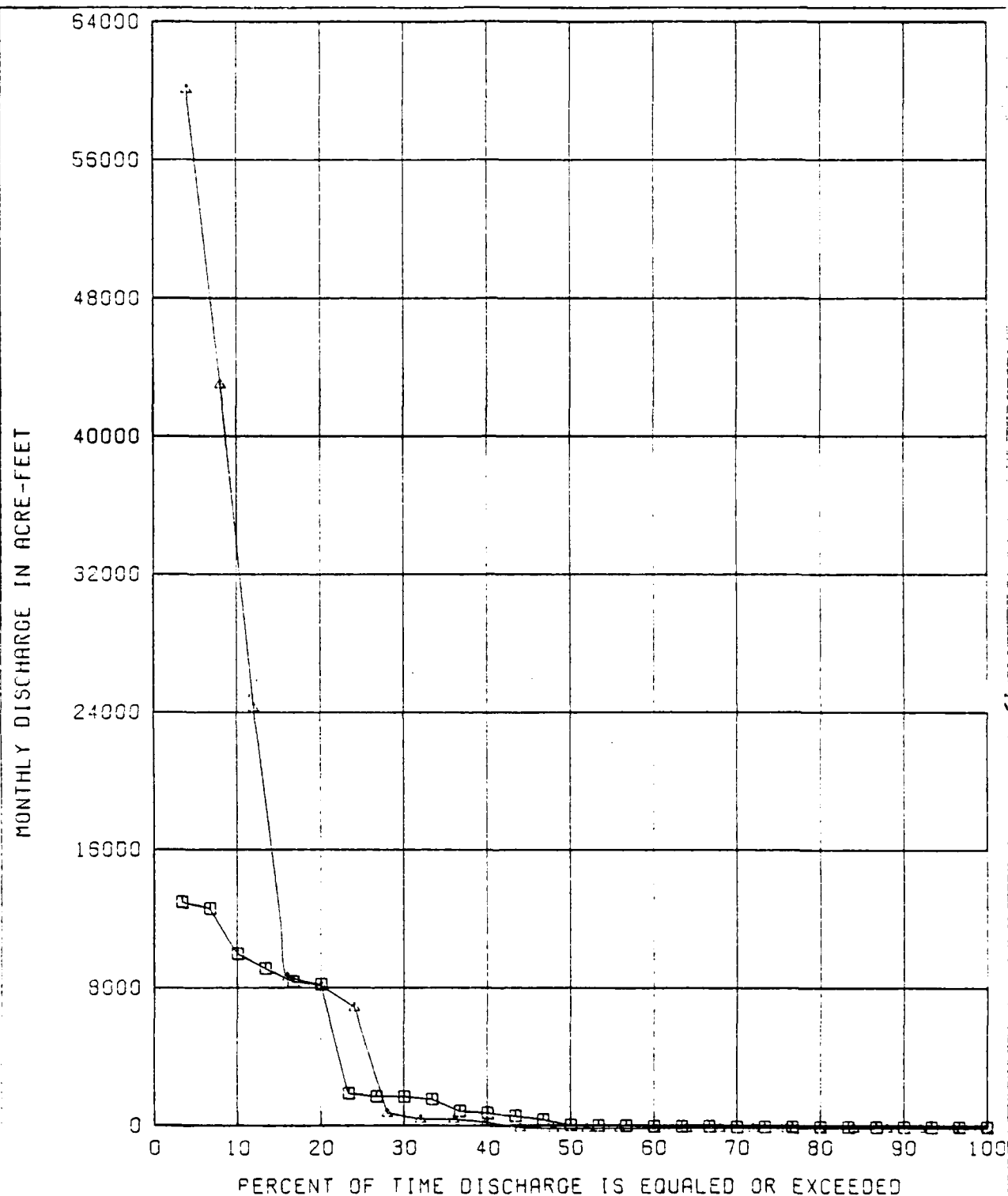
LAVON LAKE

FLOW DURATION CURVES AT DAM SITE

JULY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 19



LEGEND

□ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1953)

△ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1954-1979)

TRINITY RIVER BASIN, TEXAS

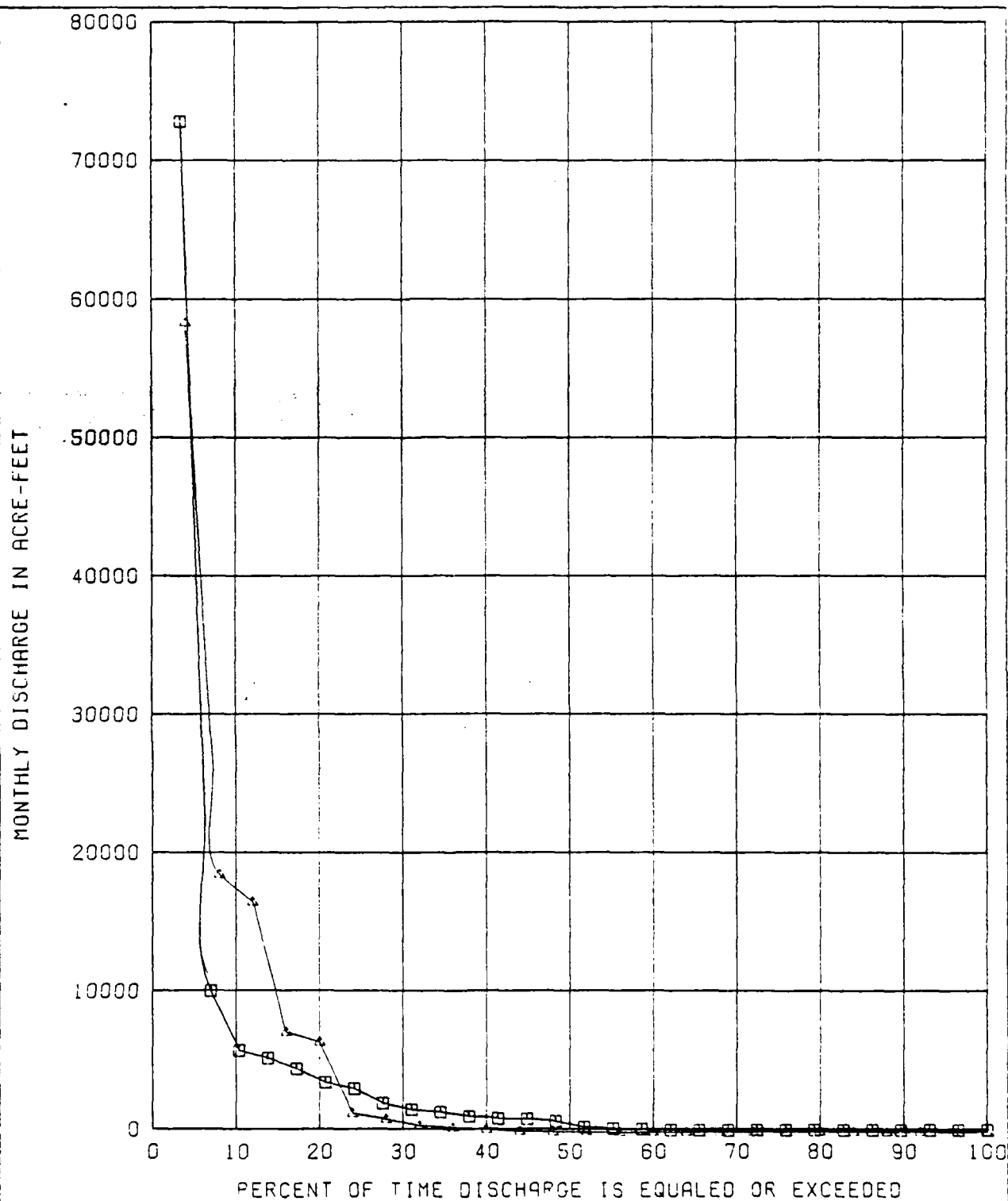
LAVON LAKE

FLOW DURATION CURVES AT DAM SITE

AUGUST FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 20



LEGEND

□ PRE-IMPONDMENT CONDITIONS
(PERIOD OF RECORD 1924-1953)

△ POST-IMPONDMENT CONDITIONS
(PERIOD OF RECORD 1954-1979)

TRINITY RIVER BASIN, TEXAS

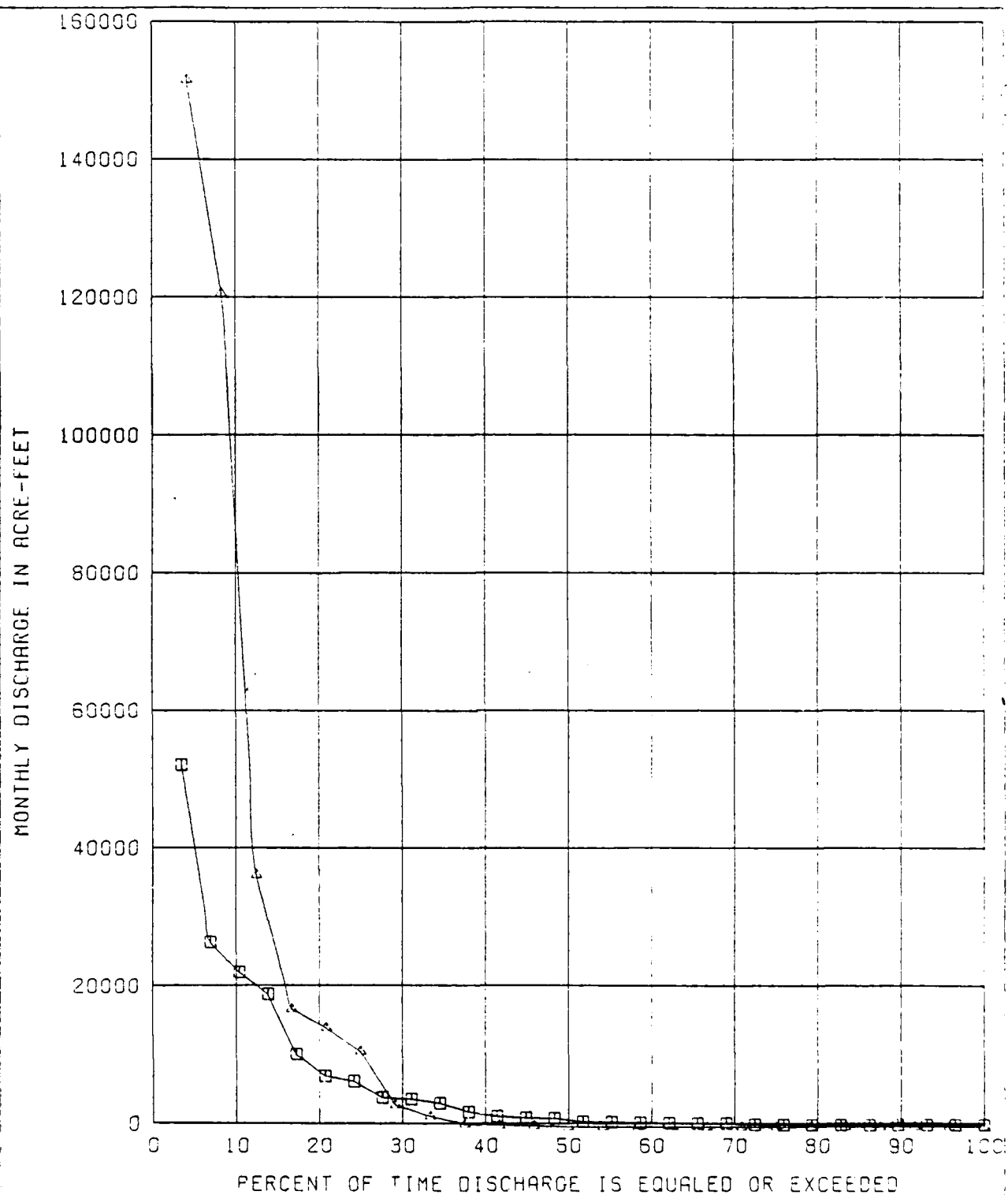
LAVON LAKE

FLOW DURATION CURVES AT DAM SITE

SEPTEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 21



LEGEND

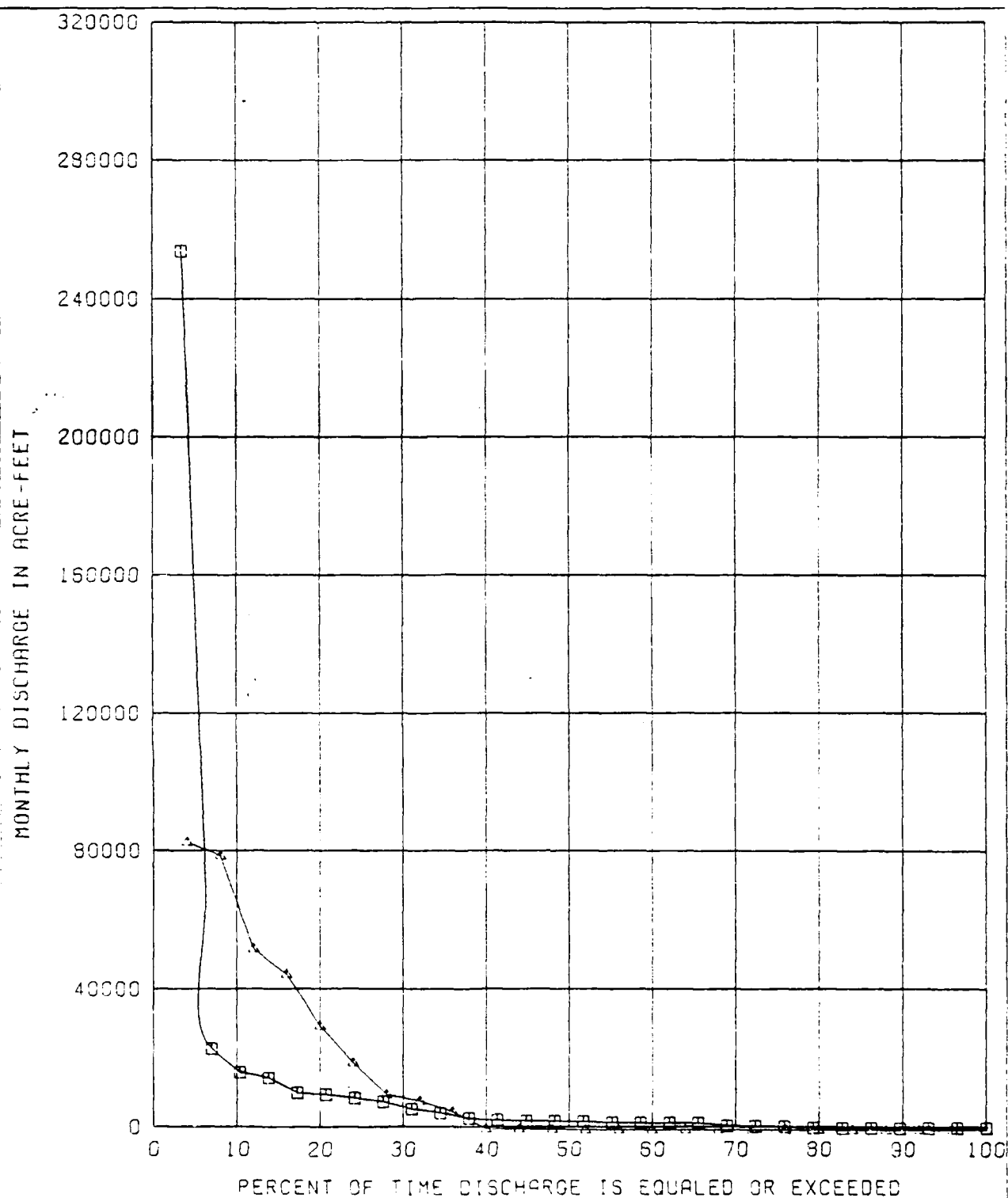
- — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1953)
- △ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1954-1979)

TRINITY RIVER BASIN, TEXAS
LAVON LAKE

FLOW DURATION CURVES AT DAM SITE
OCTOBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 22



LEGEND

□ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1953)

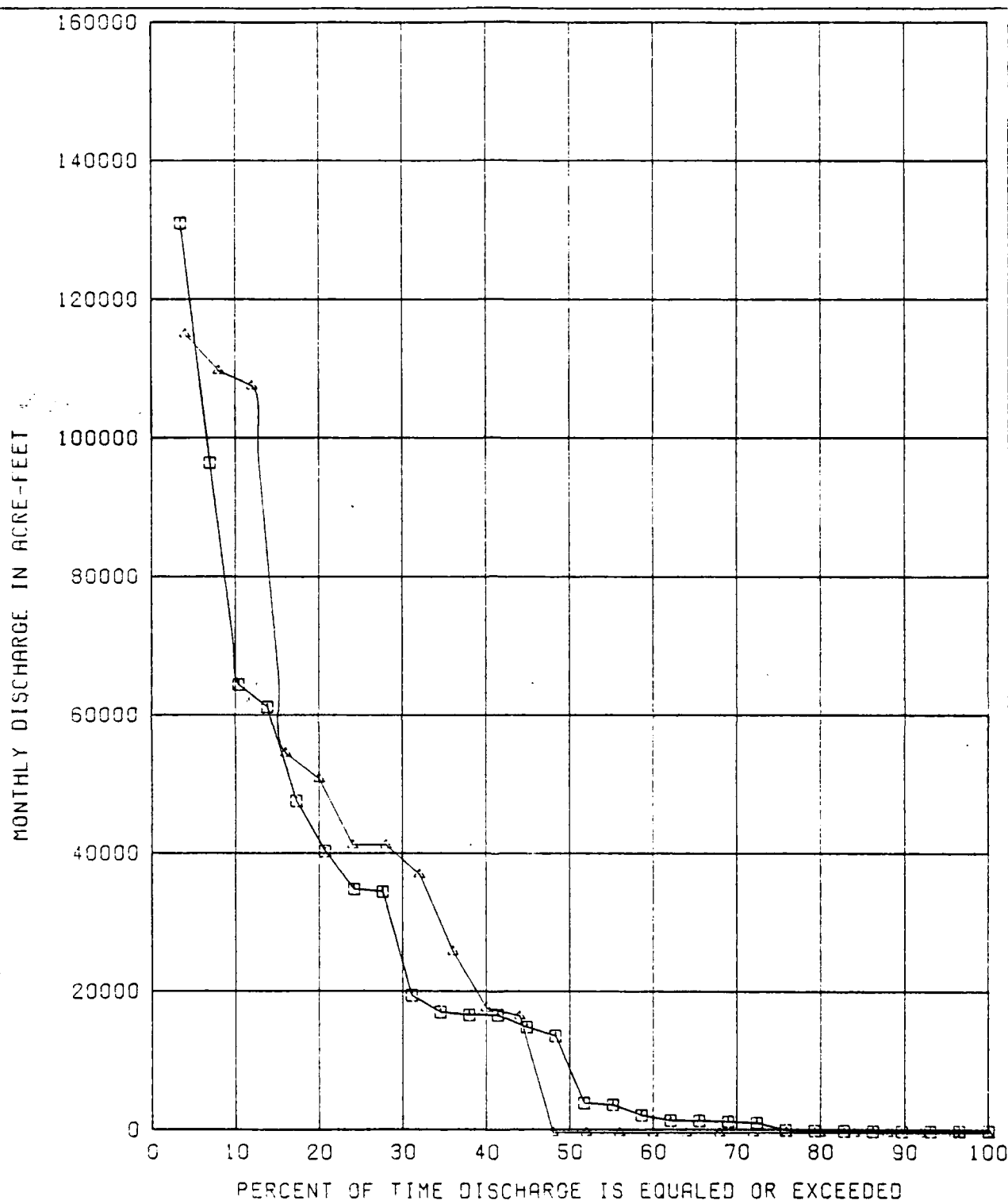
▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1954-1973)

TRINITY RIVER BASIN, TEXAS
LAVON LAKE

FLOW DURATION CURVES AT DAM SITE
NOVEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 23



LEGEND

□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1953)

△ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1954-1979)

TRINITY RIVER BASIN, TEXAS

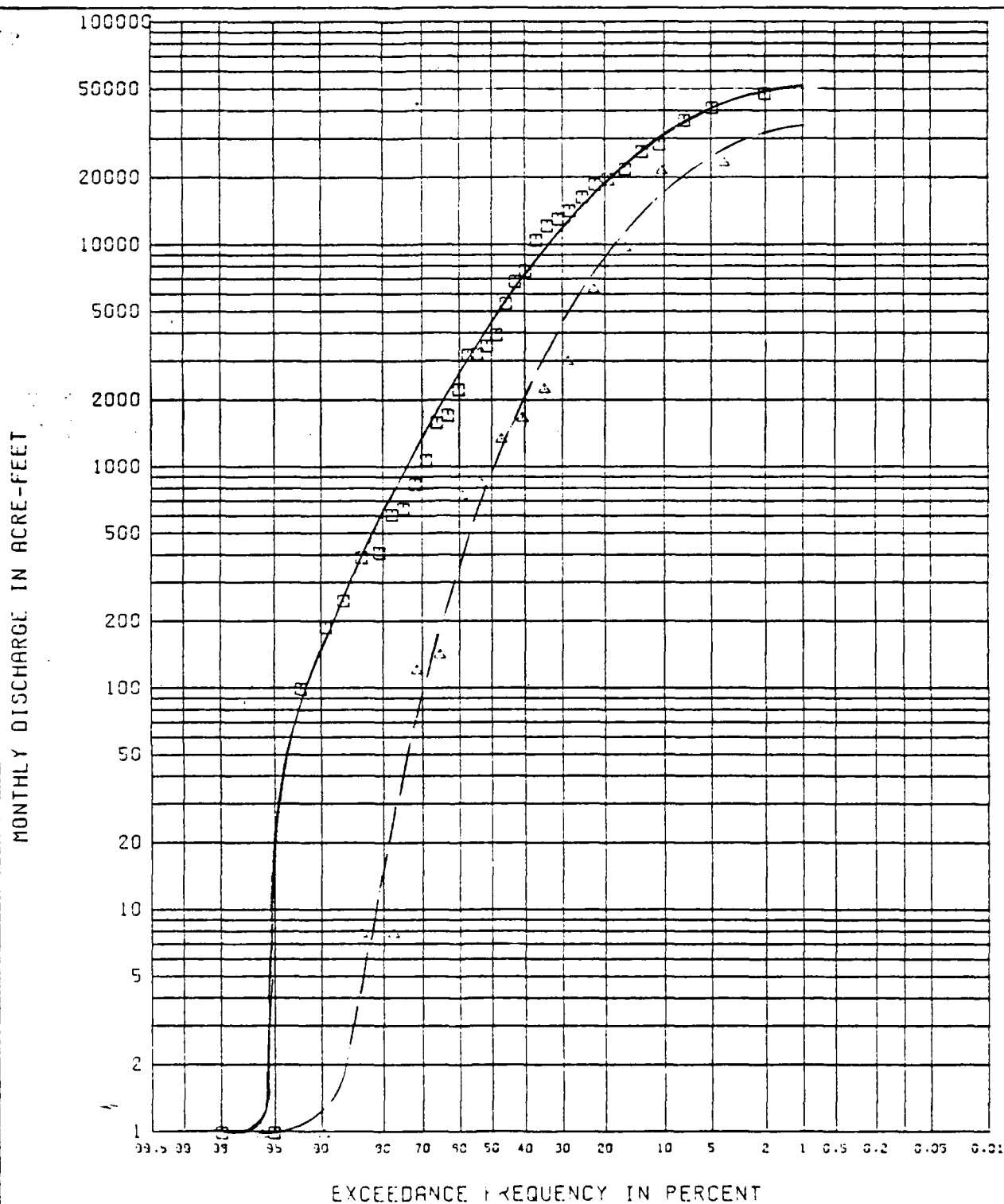
LAVON LAKE

FLOW DURATION CURVES AT DAM SITE

DECEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 24



LEGEND

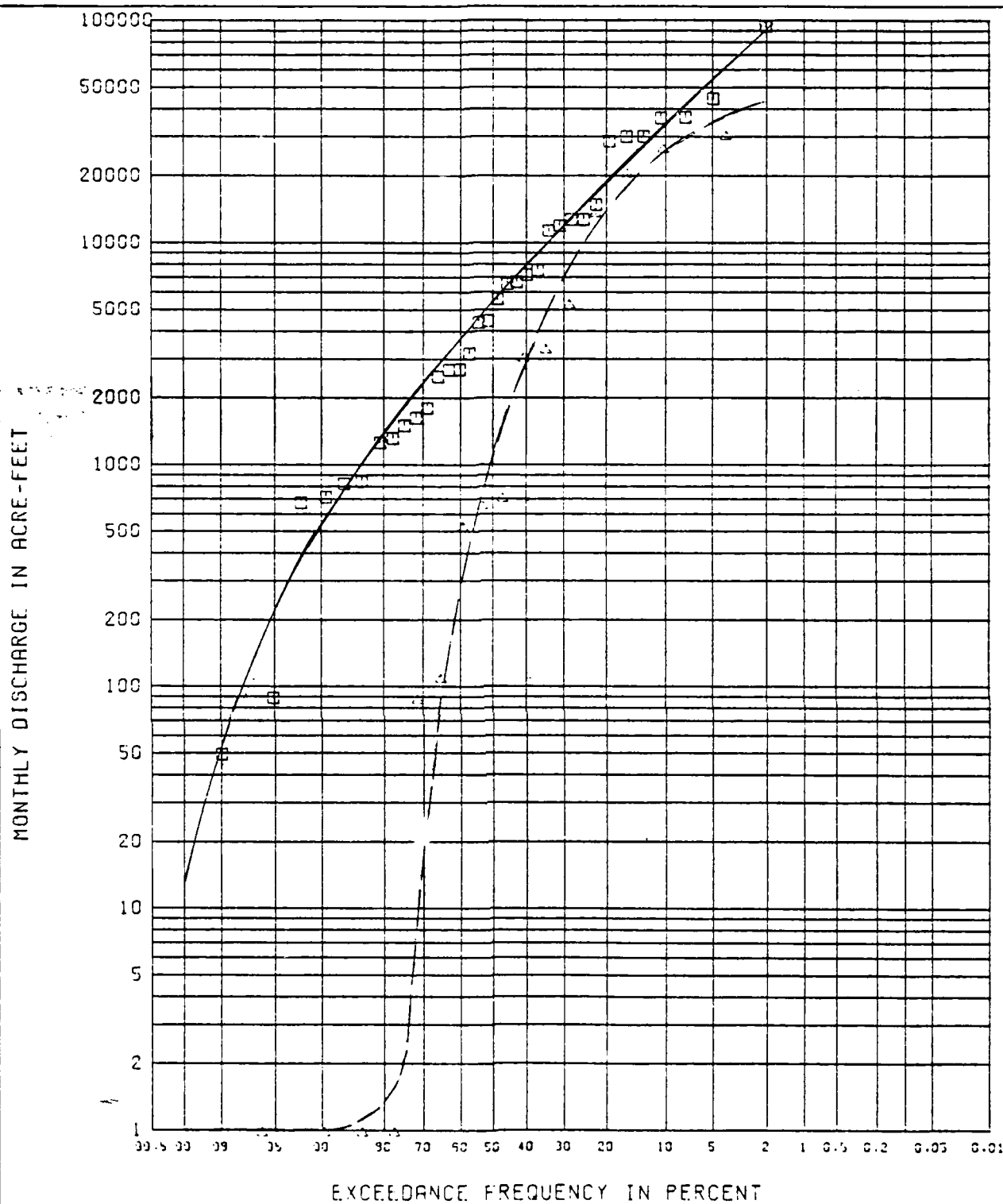
—■— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1957)

-▲- POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

TRINITY RIVER BASIN, TEXAS
NAVARRO MILLS LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
JANUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE I



LEGEND

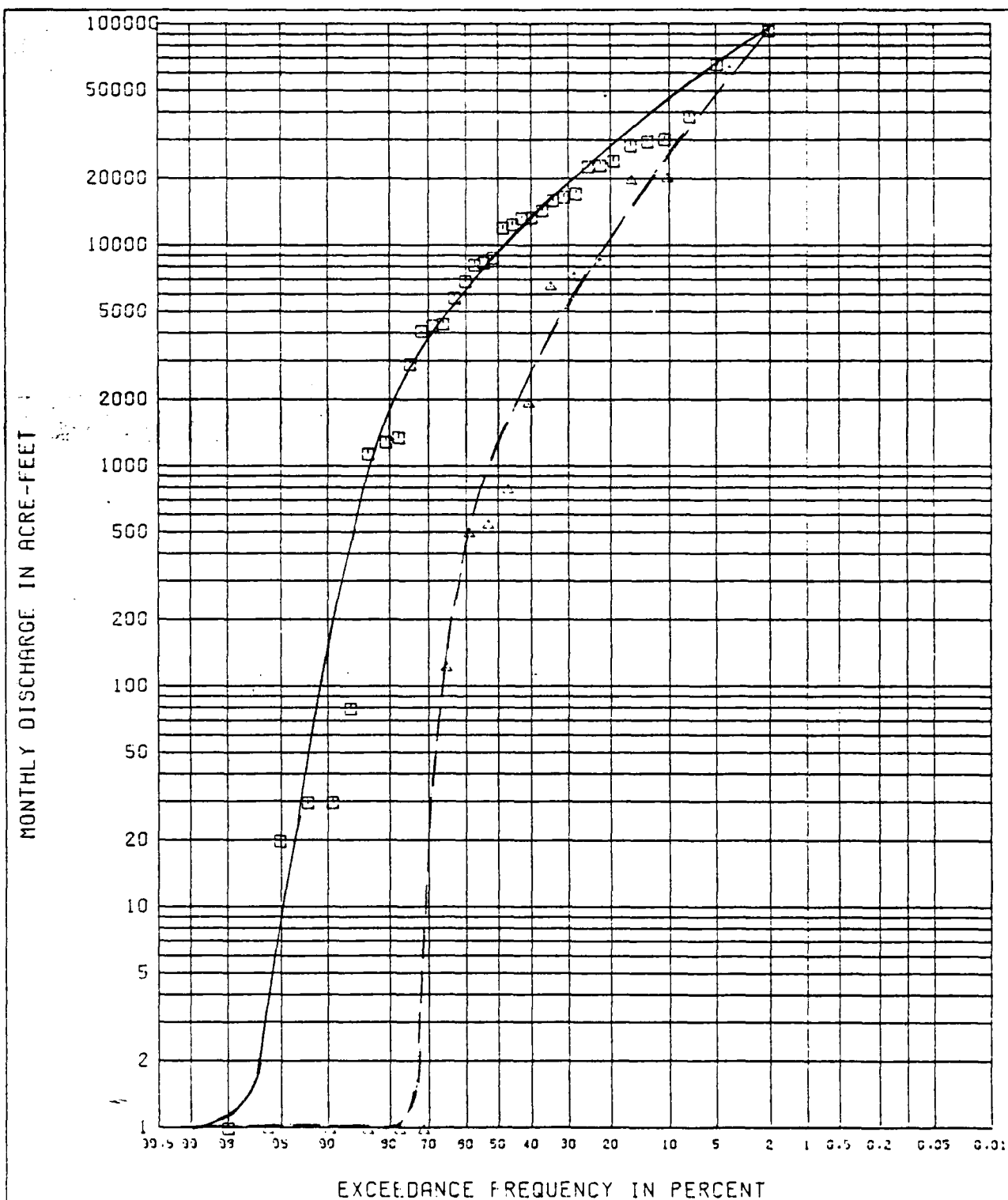
□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1957)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

TRINITY RIVER BASIN, TEXAS
NAVARRO MILLS LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
FEBRUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 2



LEGEND

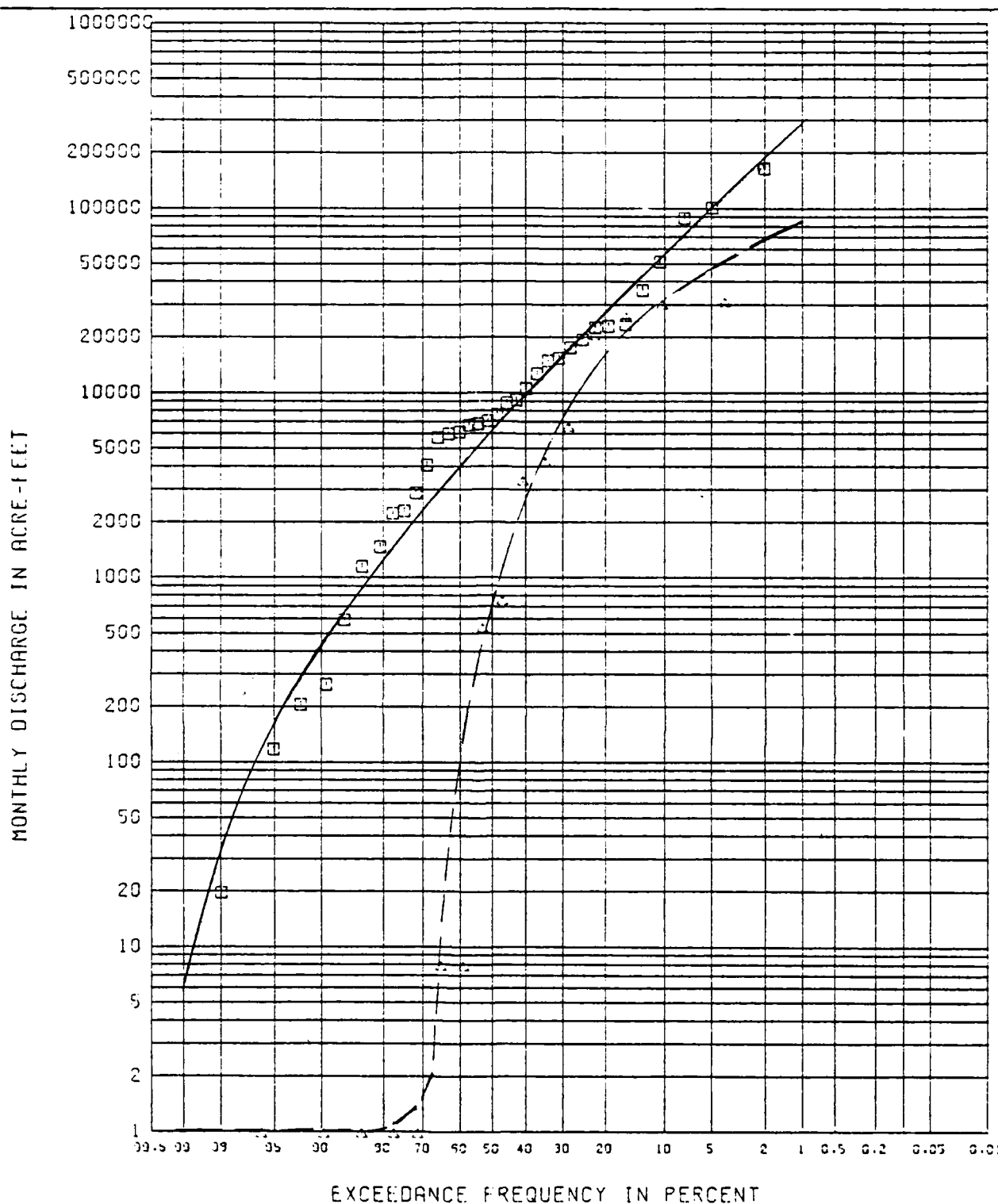
□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1957)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1963-1979)

TRINITY RIVER BASIN, TEXAS
NAVARRO MILLS LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
MARCH FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 3



LEGEND

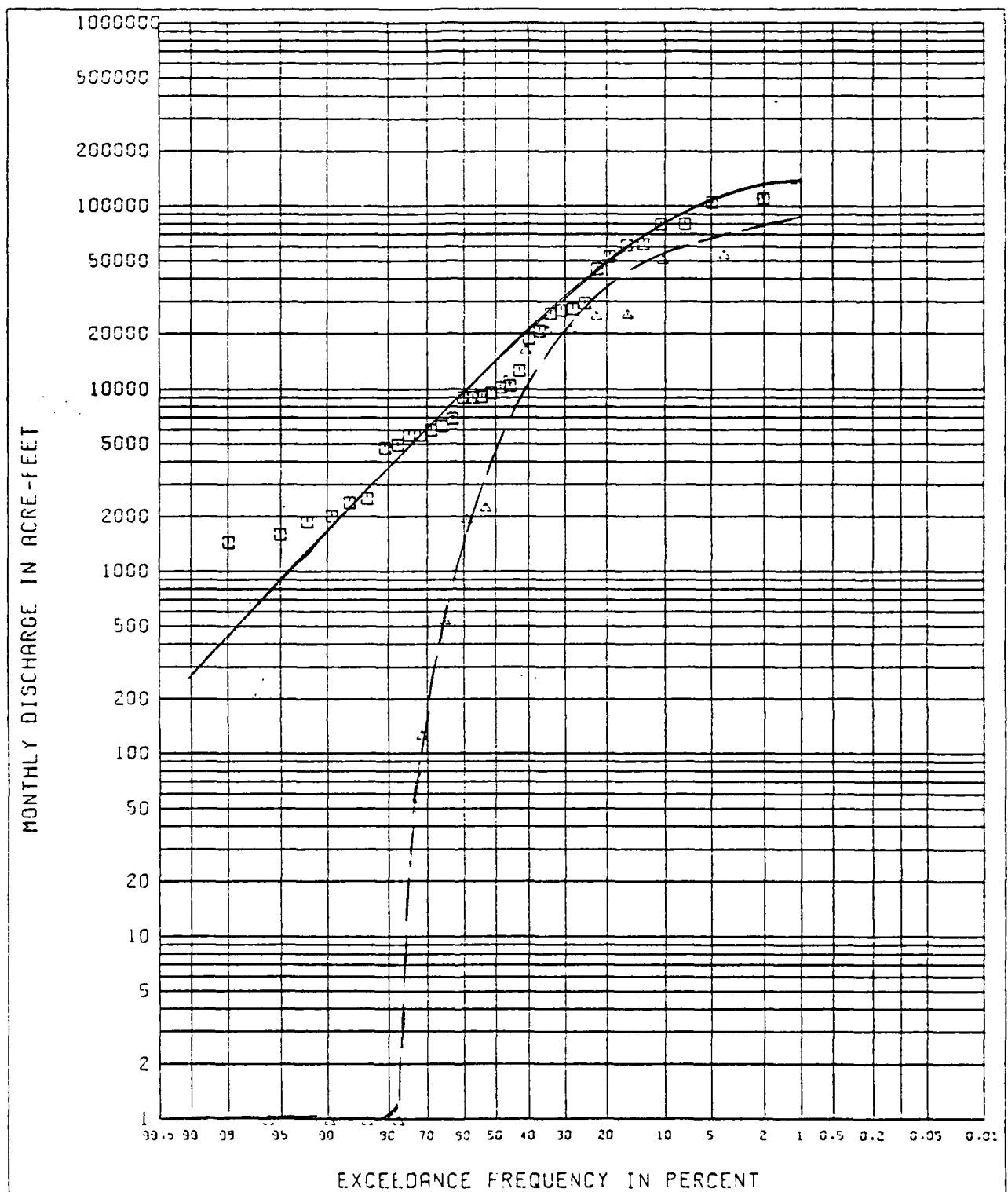
□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1957)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1963-1979)

TRINITY RIVER BASIN, TEXAS
NAVARRO MILLS LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
APRIL FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 4



LEGEND

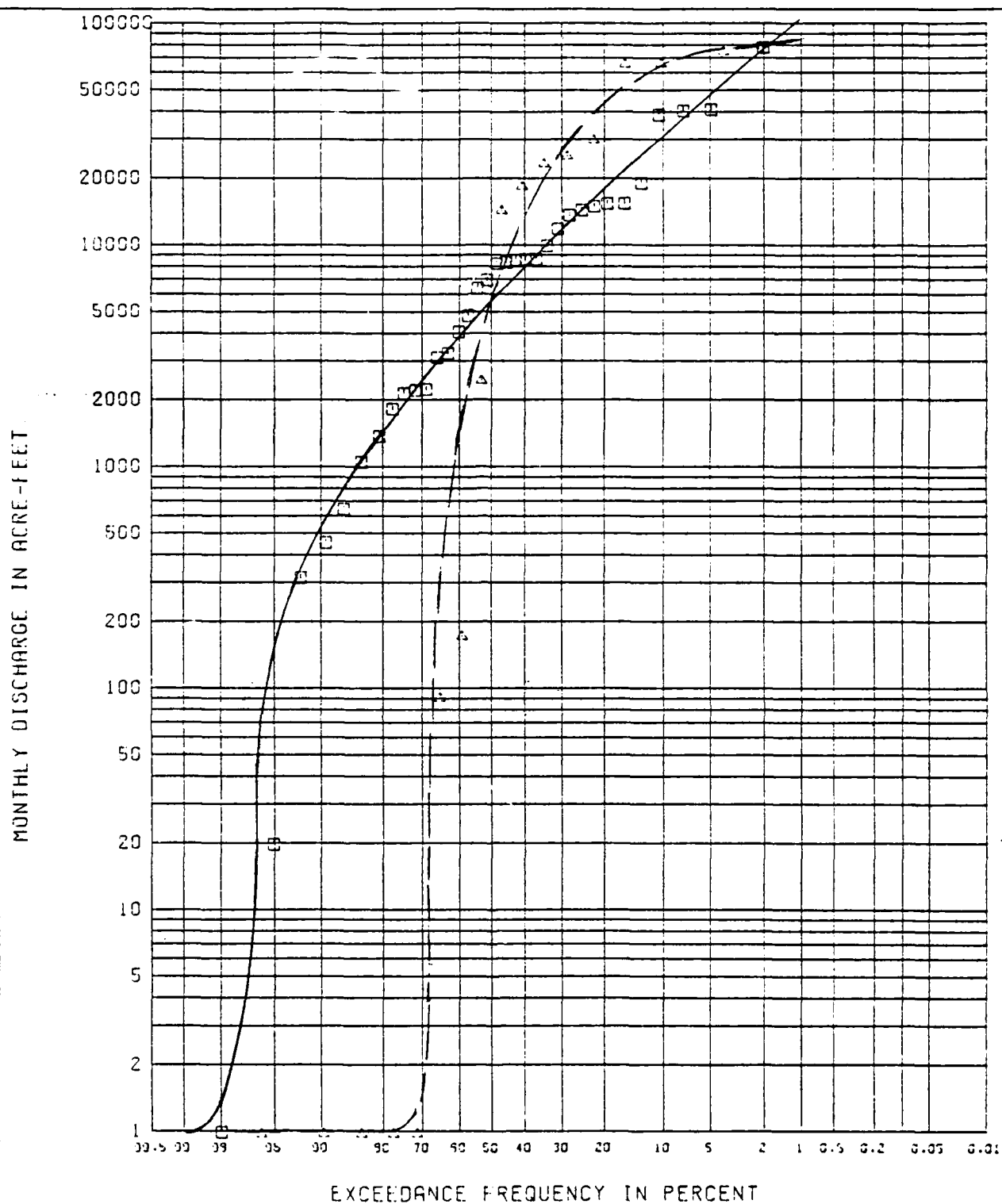
□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1957)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

TRINITY RIVER BASIN, TEXAS
NAVARRO MILLS LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
MAY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 5



LEGEND

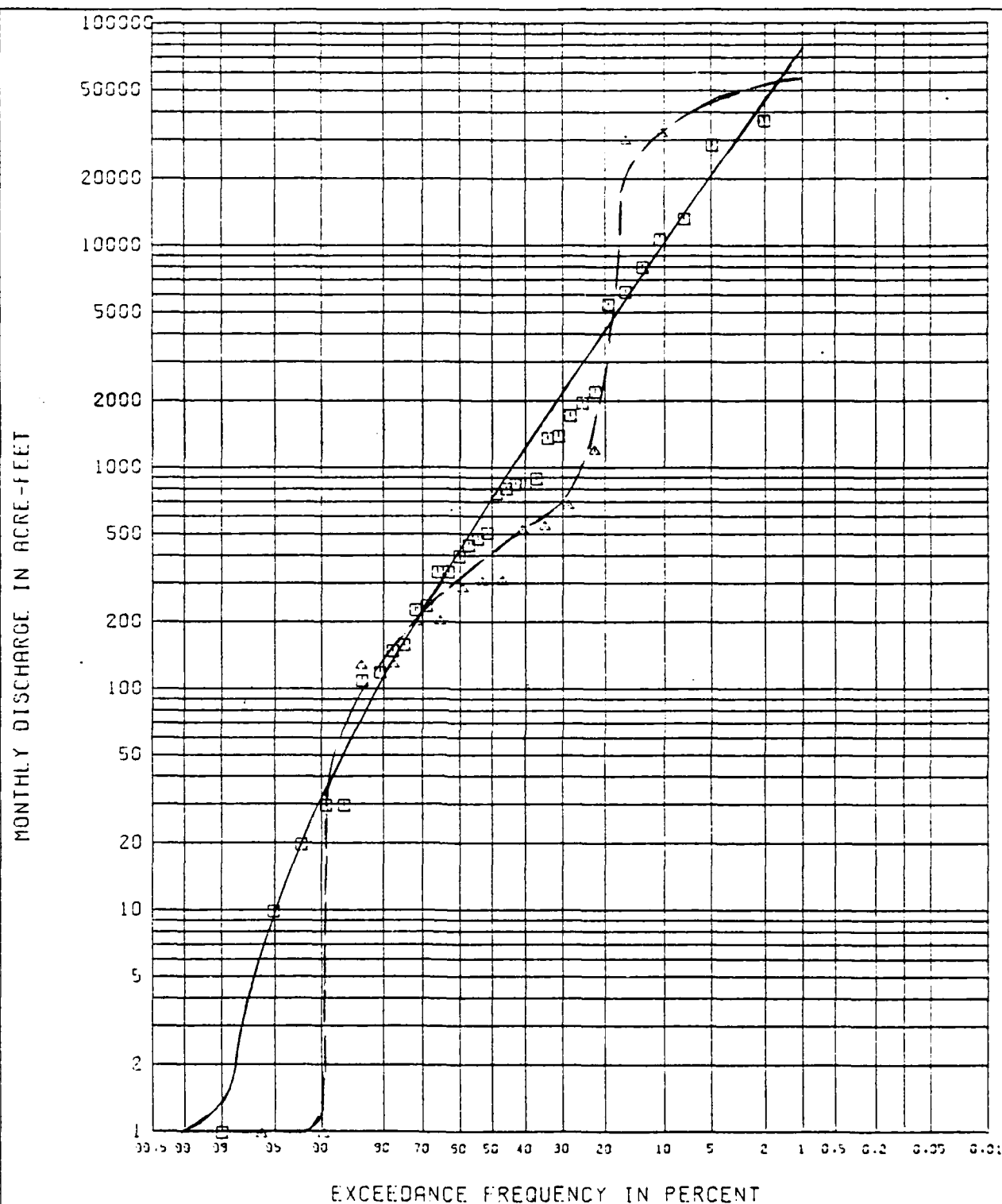
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(PERIOD OF RECORD 1924-1957)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

TRINITY RIVER BASIN, TEXAS
NAVARRO MILLS LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
JUNE FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 6



LEGEND

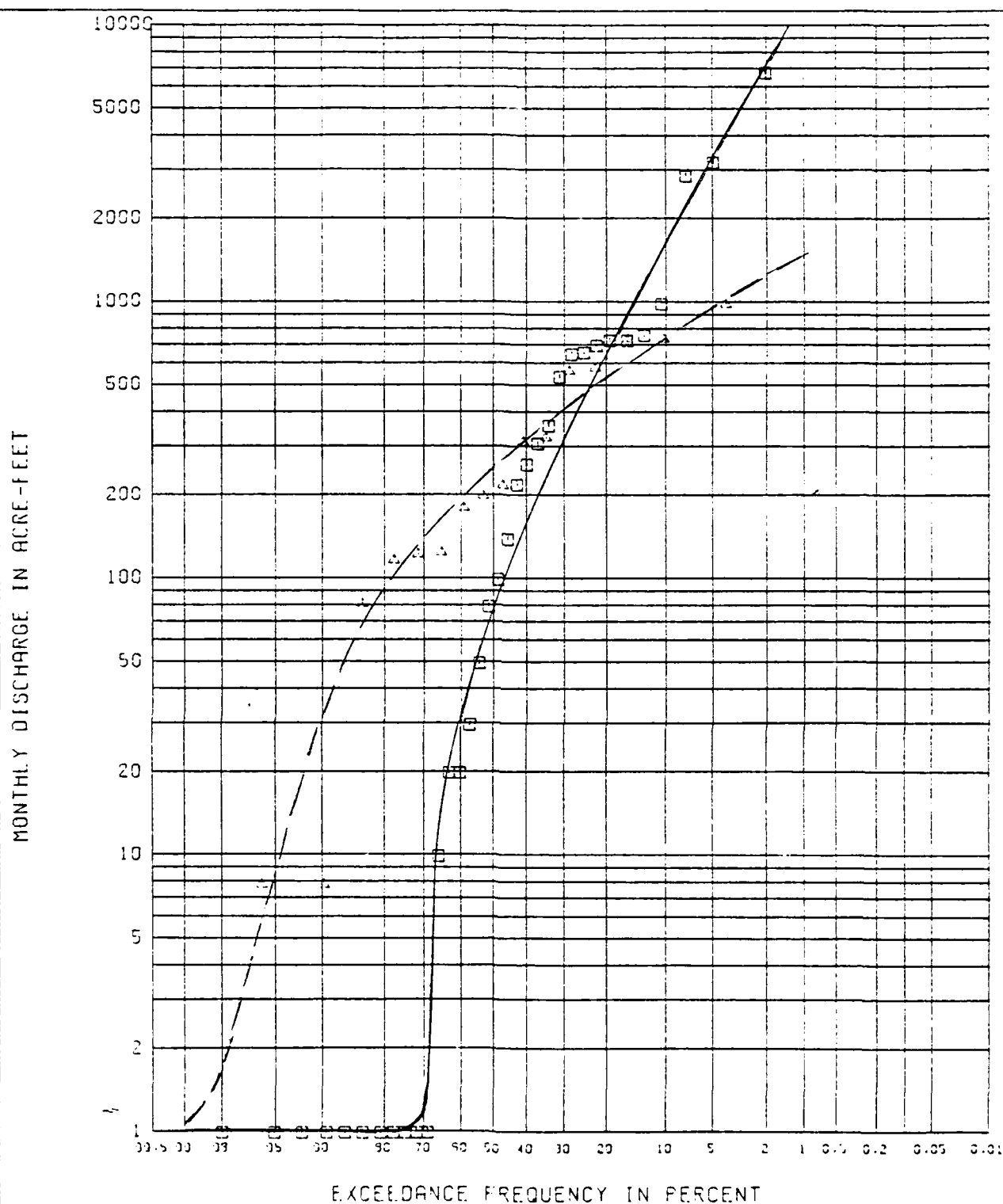
□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1957)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

TRINITY RIVER BASIN, TEXAS
NAVARRO MILLS LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
JULY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 7



LEGEND

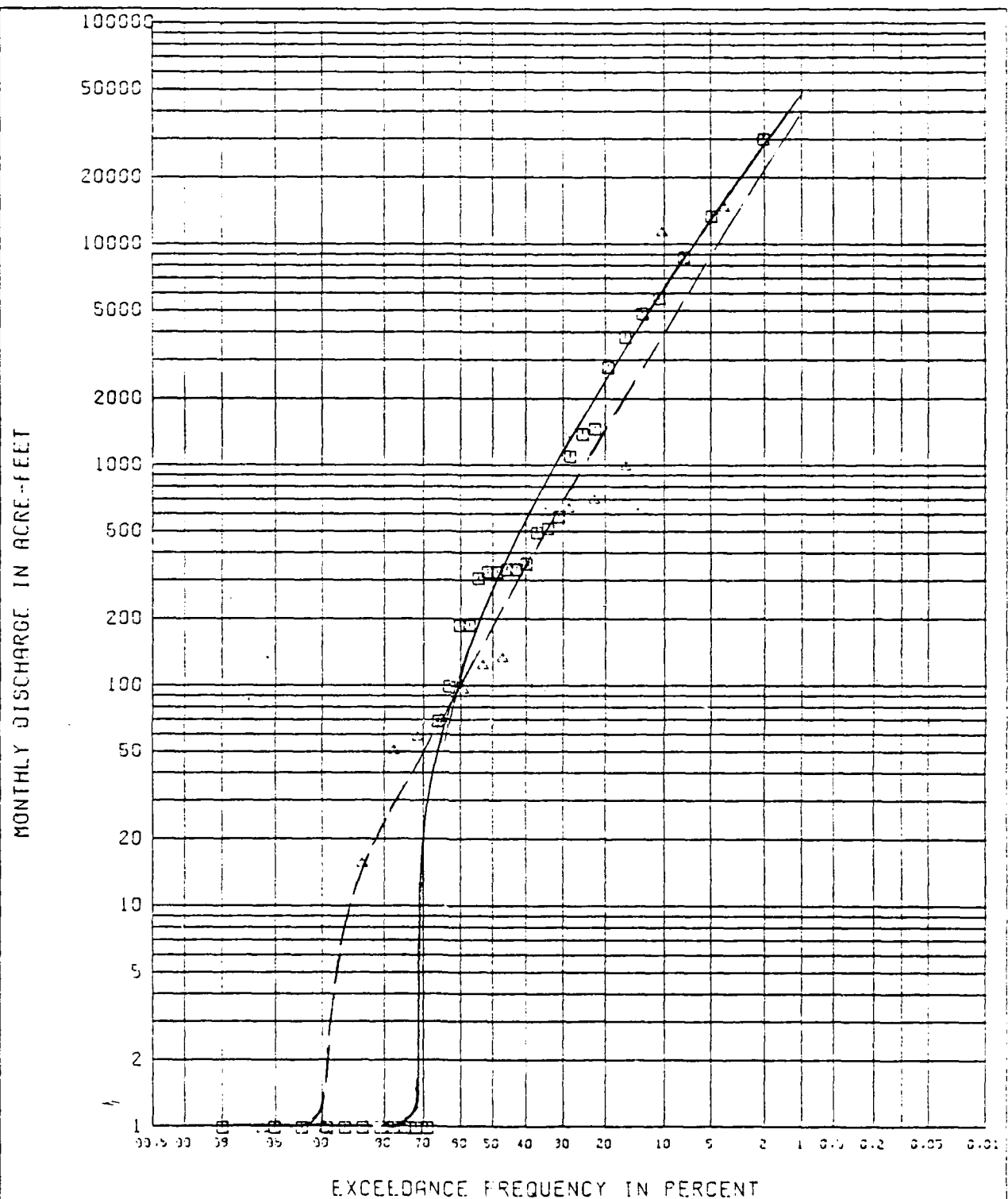
□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1957)

△ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1963-1979)

TRINITY RIVER BASIN, TEXAS
NAVARRO MILLS LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
AUGUST FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 8



LEGEND

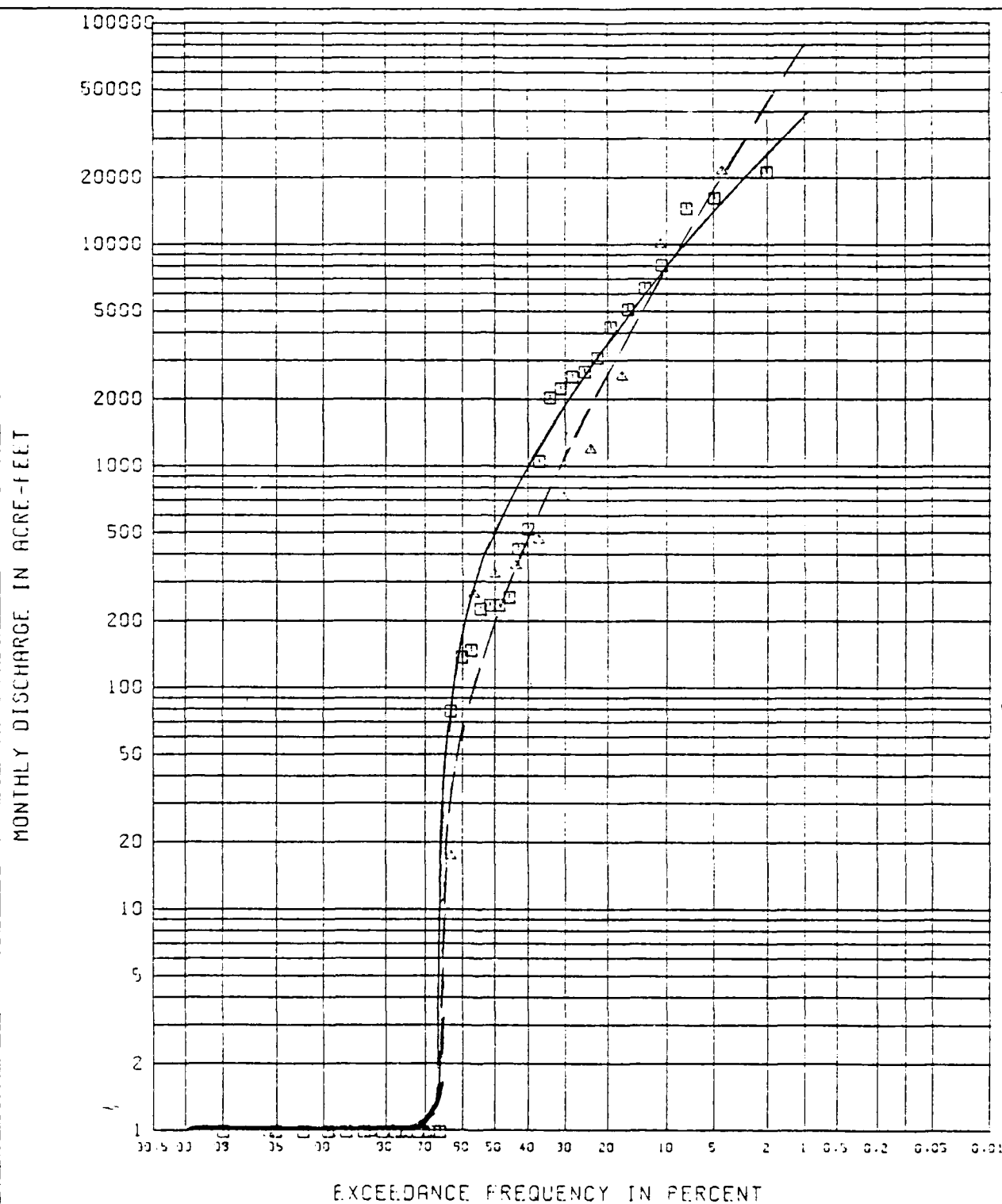
—■— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1957)

-△- POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1963-1979)

TRINITY RIVER BASIN, TEXAS
NAVARRO MILLS LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
SEPTEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 9



LEGEND

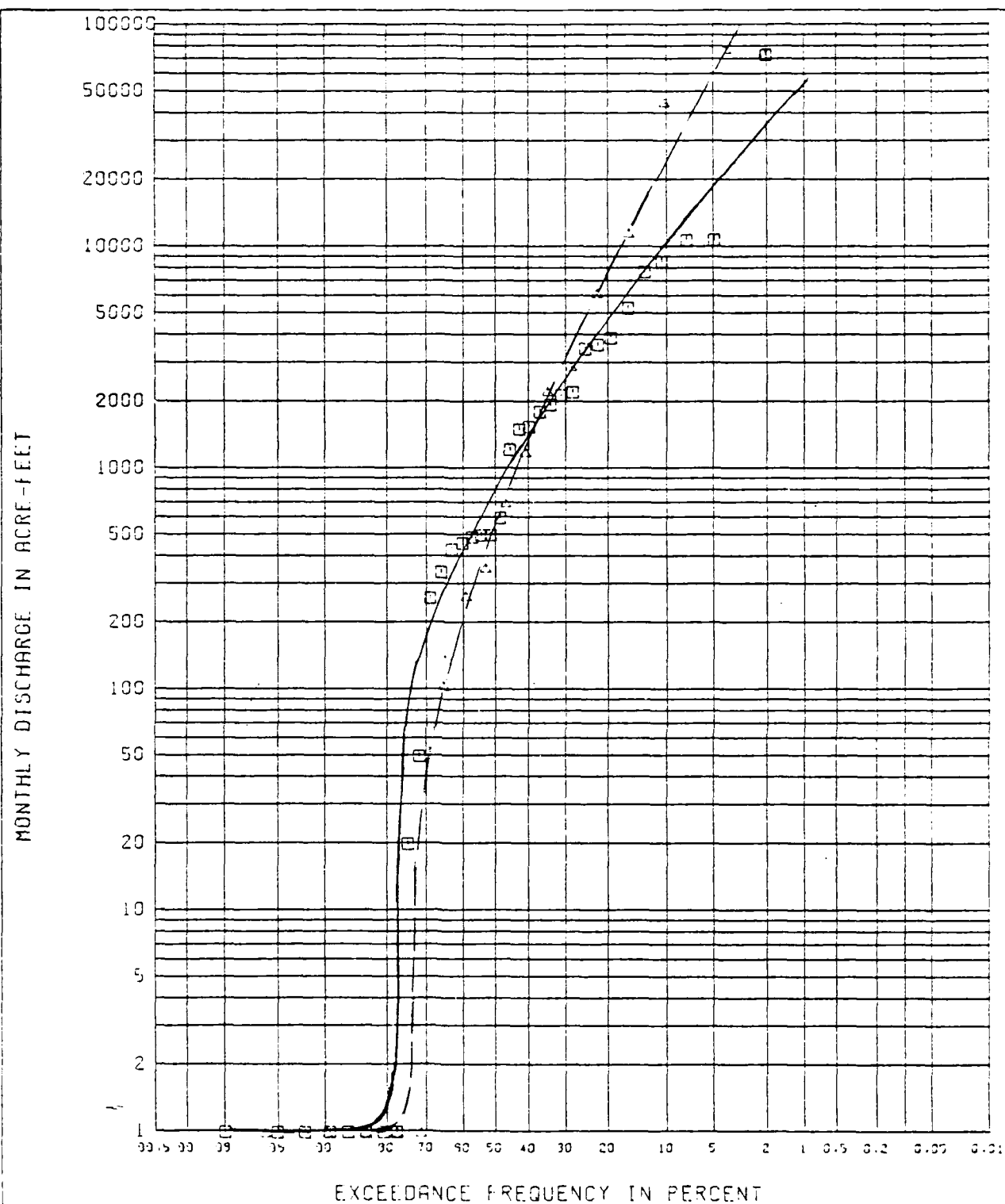
□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1957)

△ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

TRINITY RIVER BASIN, TEXAS
NAVARRO MILLS LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
OCTOBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 10



LEGEND

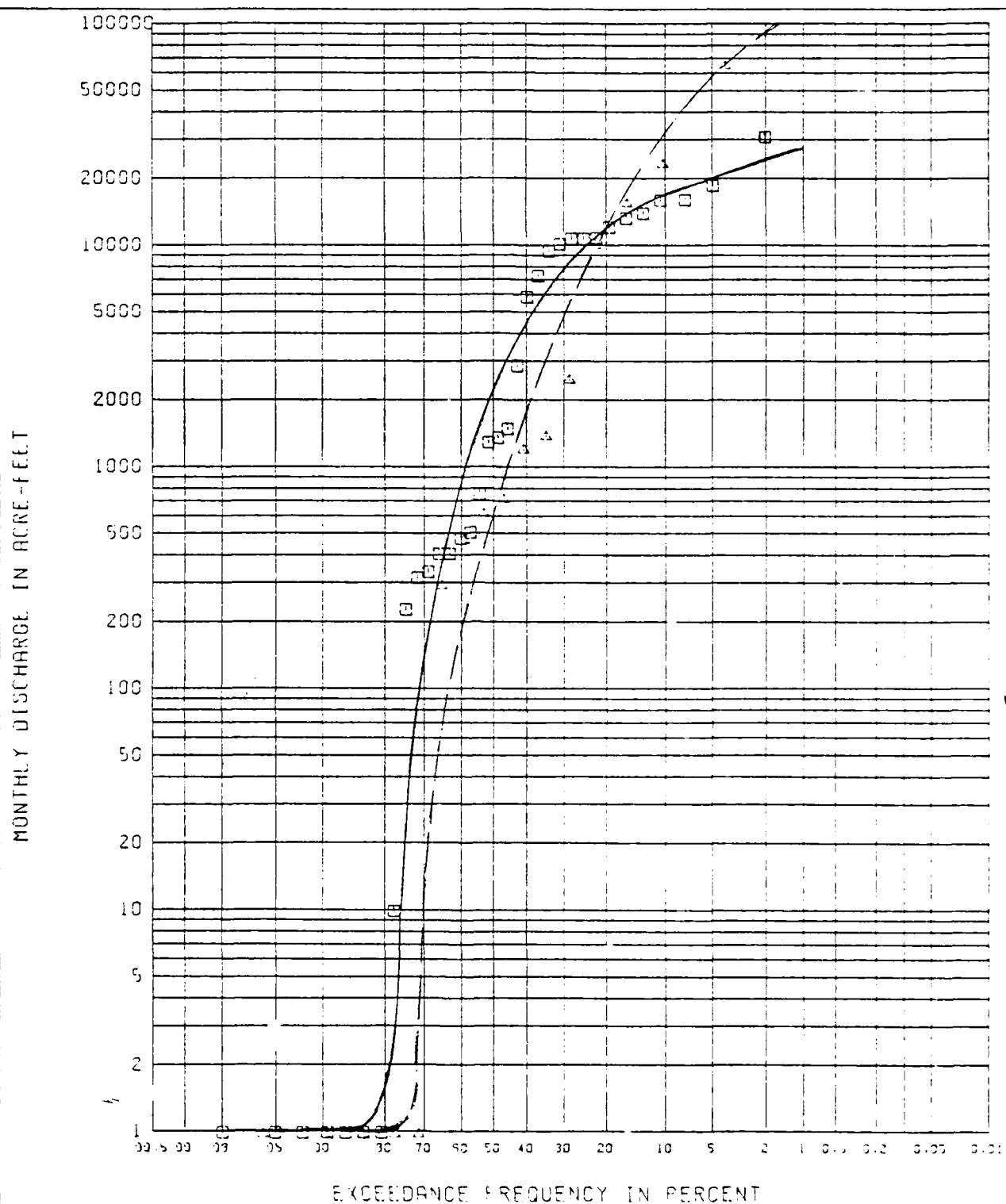
—□— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1957)

—▲— POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

TRINITY RIVER BASIN, TEXAS
NAVARRO MILLS LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
NOVEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 11



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1957)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1963-1979)

TRINITY RIVER BASIN, TEXAS
NAVARRO MILLS LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
DECEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 12

AD-A156 497

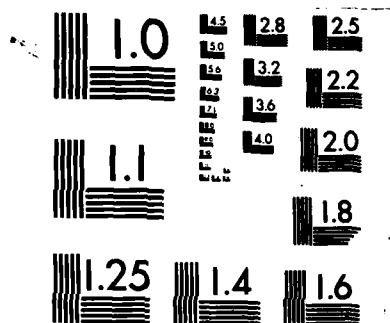
RESERVOIR CONTROL CENTER: ACTIVITIES AND ACCOMPLISHMENTS OF THE SOUTHWEST. (U) CORPS OF ENGINEERS DALLAS TX SOUTHWESTERN DIV JAN 81

47

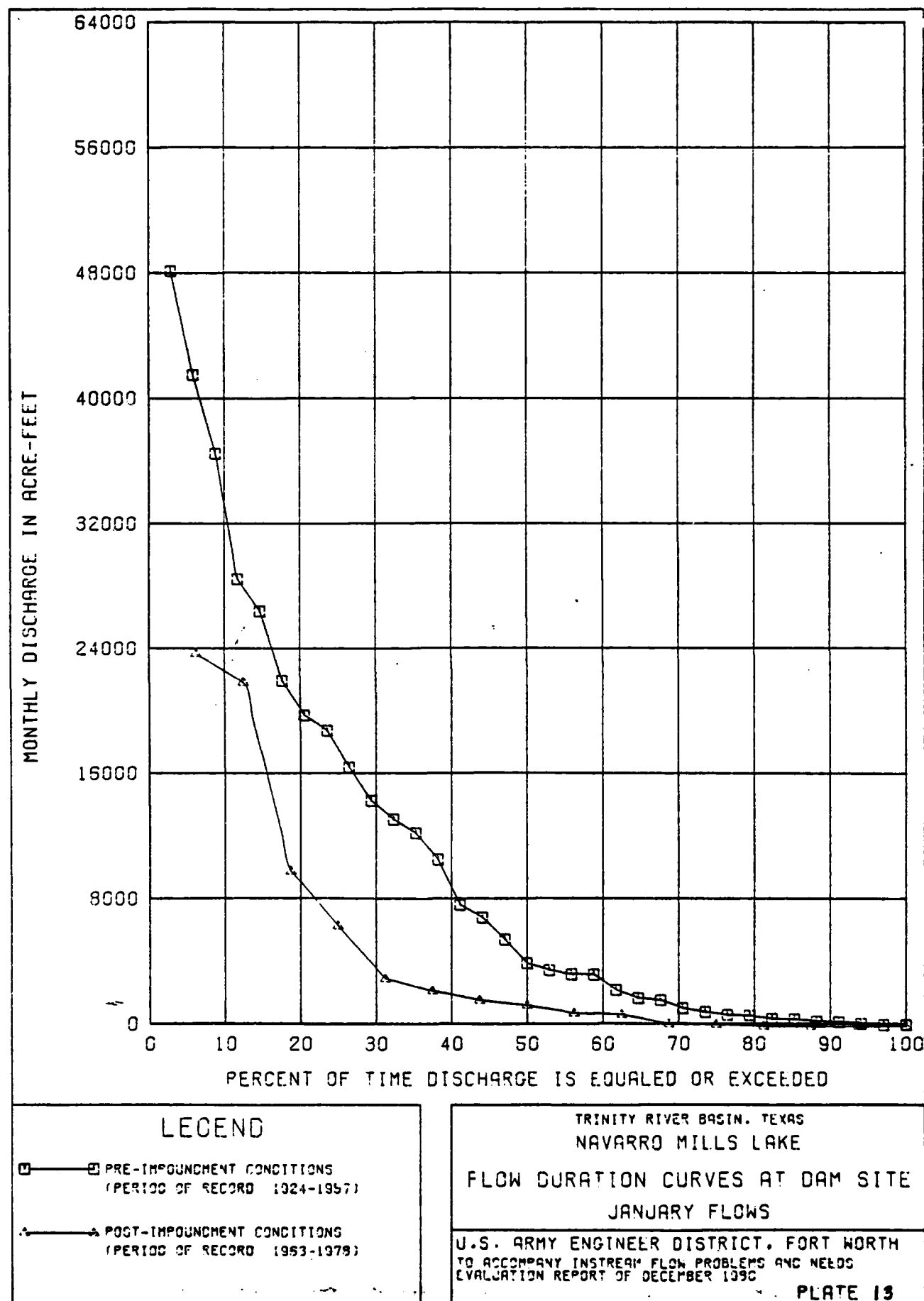
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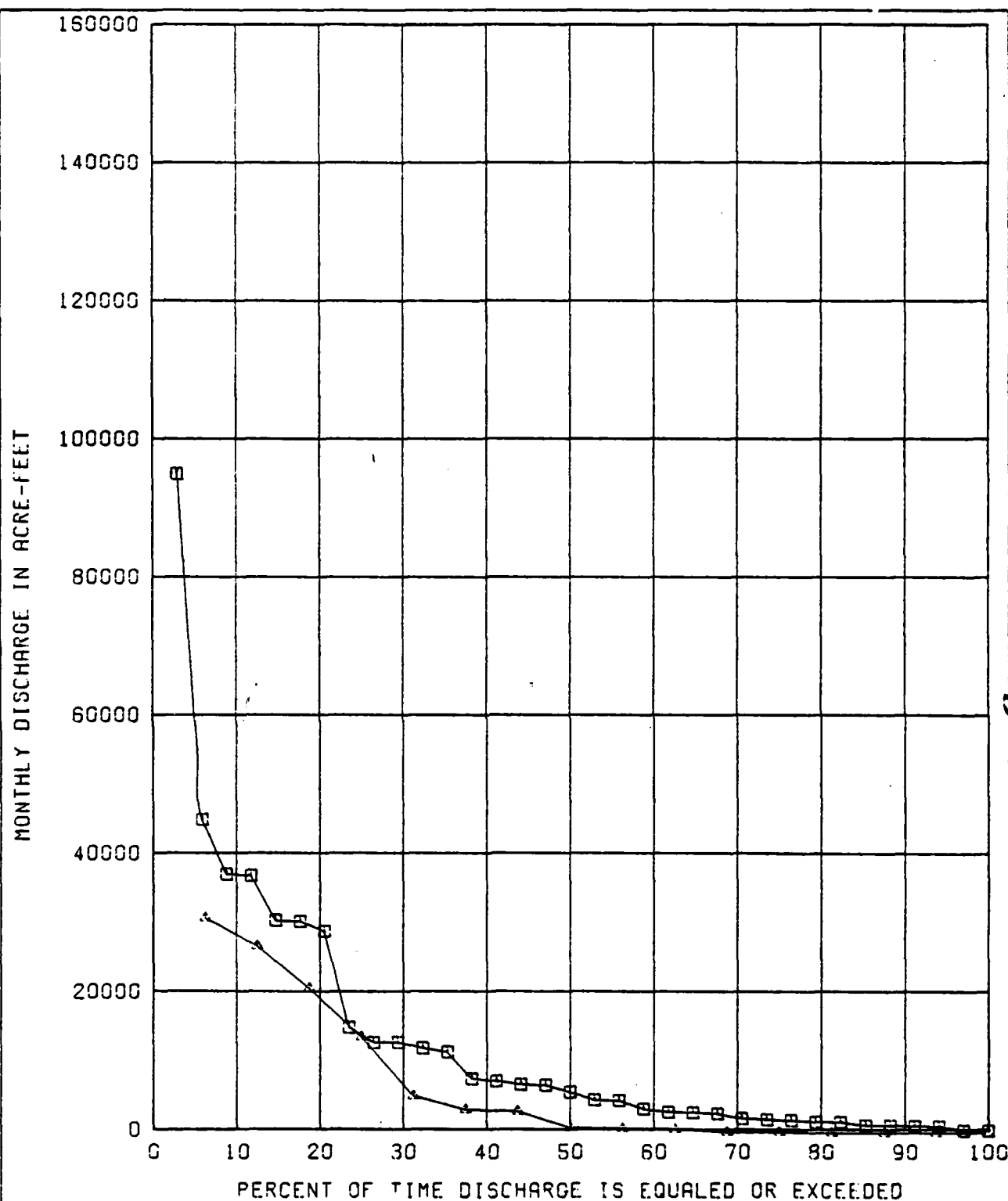
F/G 13/2

NL



MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A





LEGEND

□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1957)

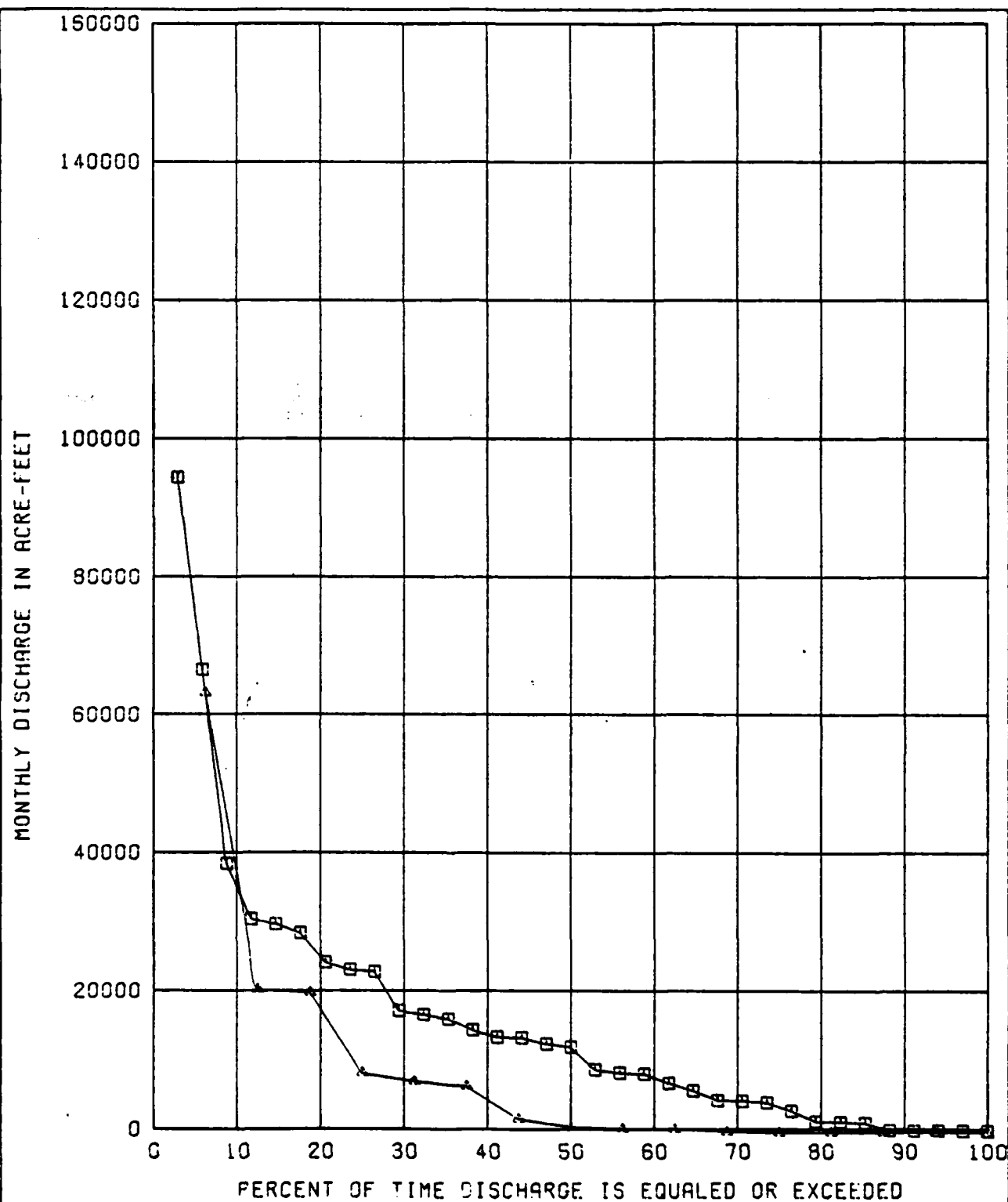
△ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1963-1979)

TRINITY RIVER BASIN, TEXAS
NAVARRO MILLS LAKE

FLOW DURATION CURVES AT DAM SITE
FEBRUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 14



LEGEND

□ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1957)

▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

TRINITY RIVER BASIN, TEXAS

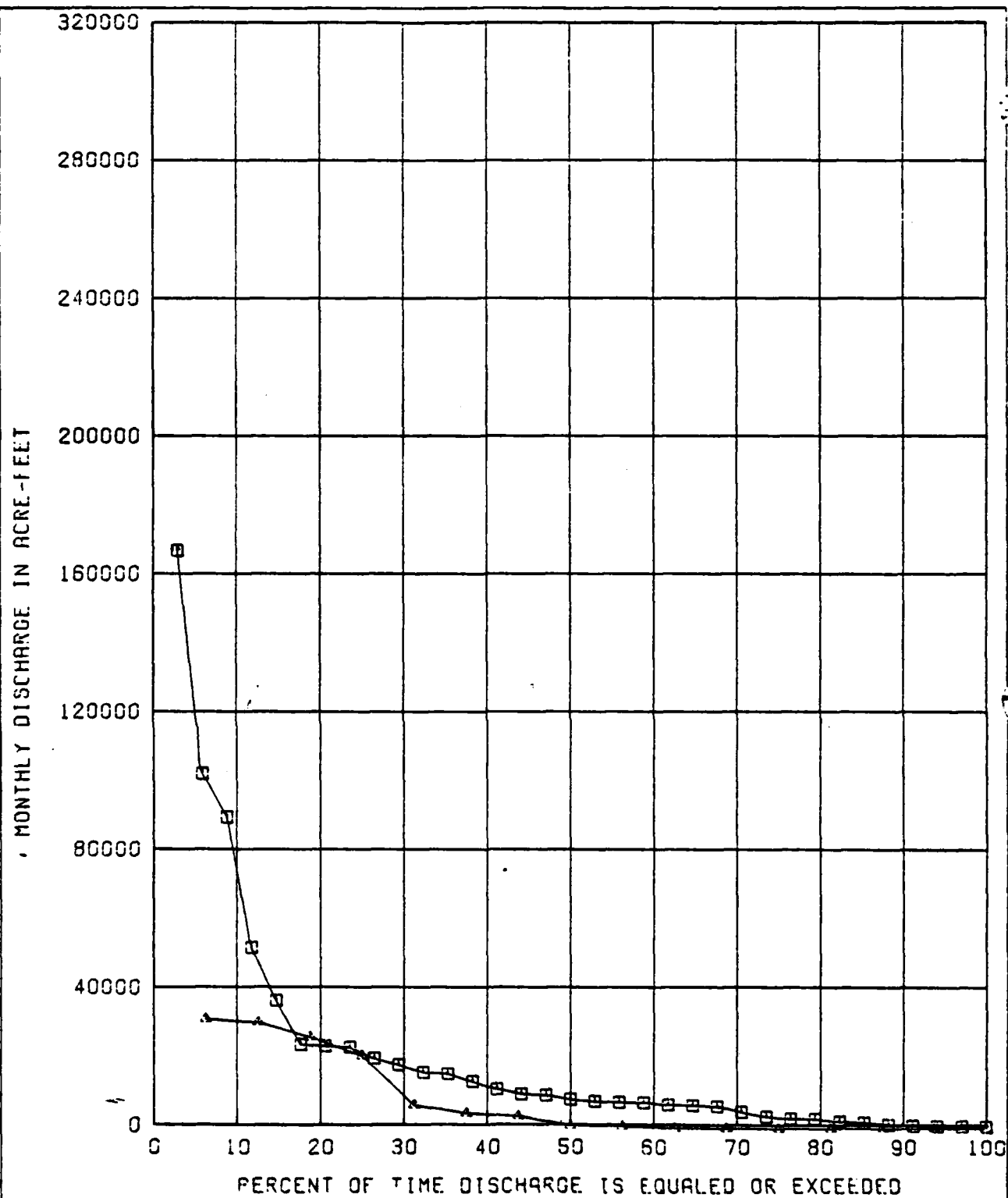
NAVARRO MILLS LAKE

FLOW DURATION CURVES AT DAM SITE

MARCH FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 15



LEGEND

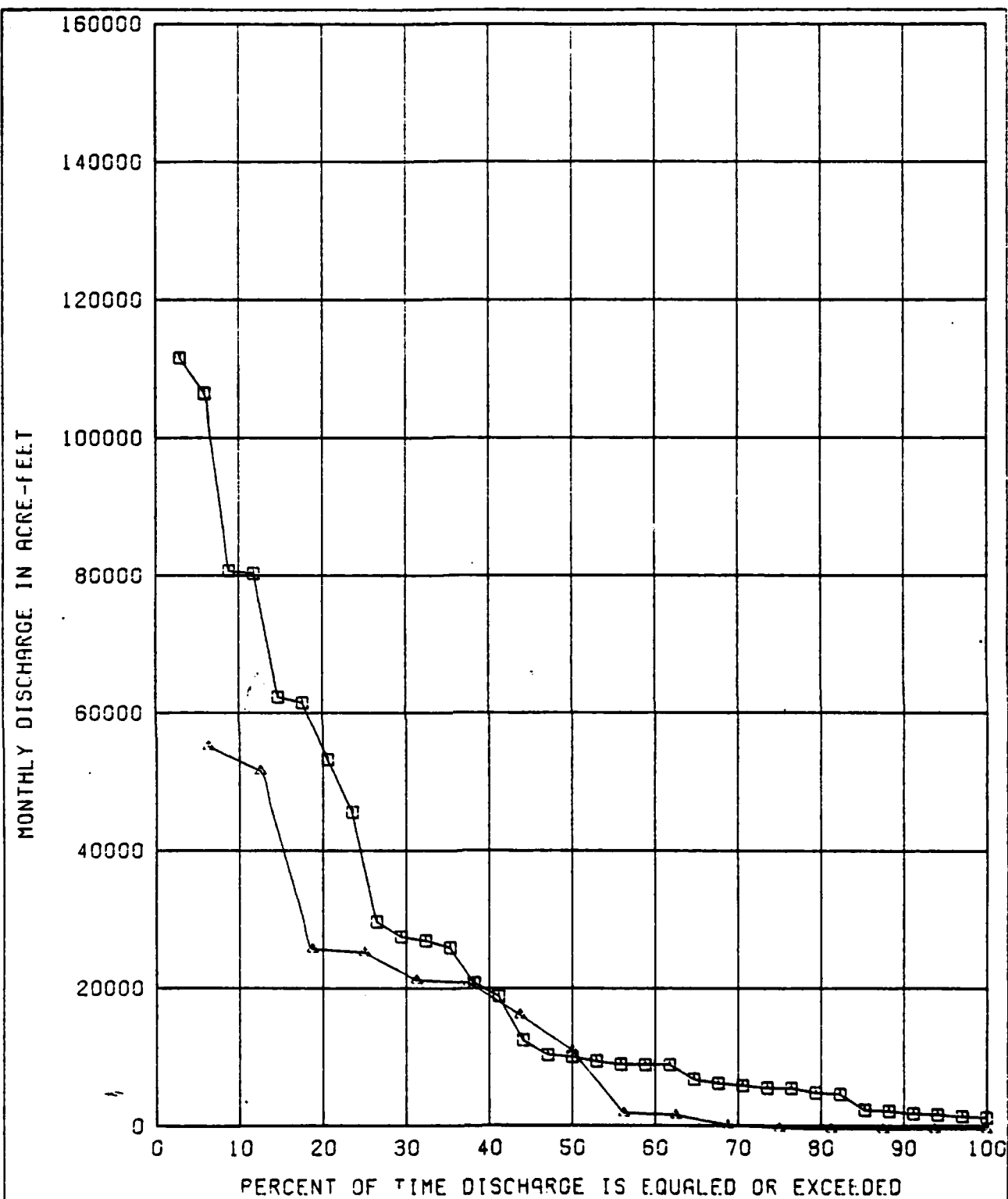
- — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1957)
- ▲ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

TRINITY RIVER BASIN, TEXAS
NAVARRO MILLS LAKE

FLOW DURATION CURVES AT DAM SITE
APRIL FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 16



LEGEND

□ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1957)

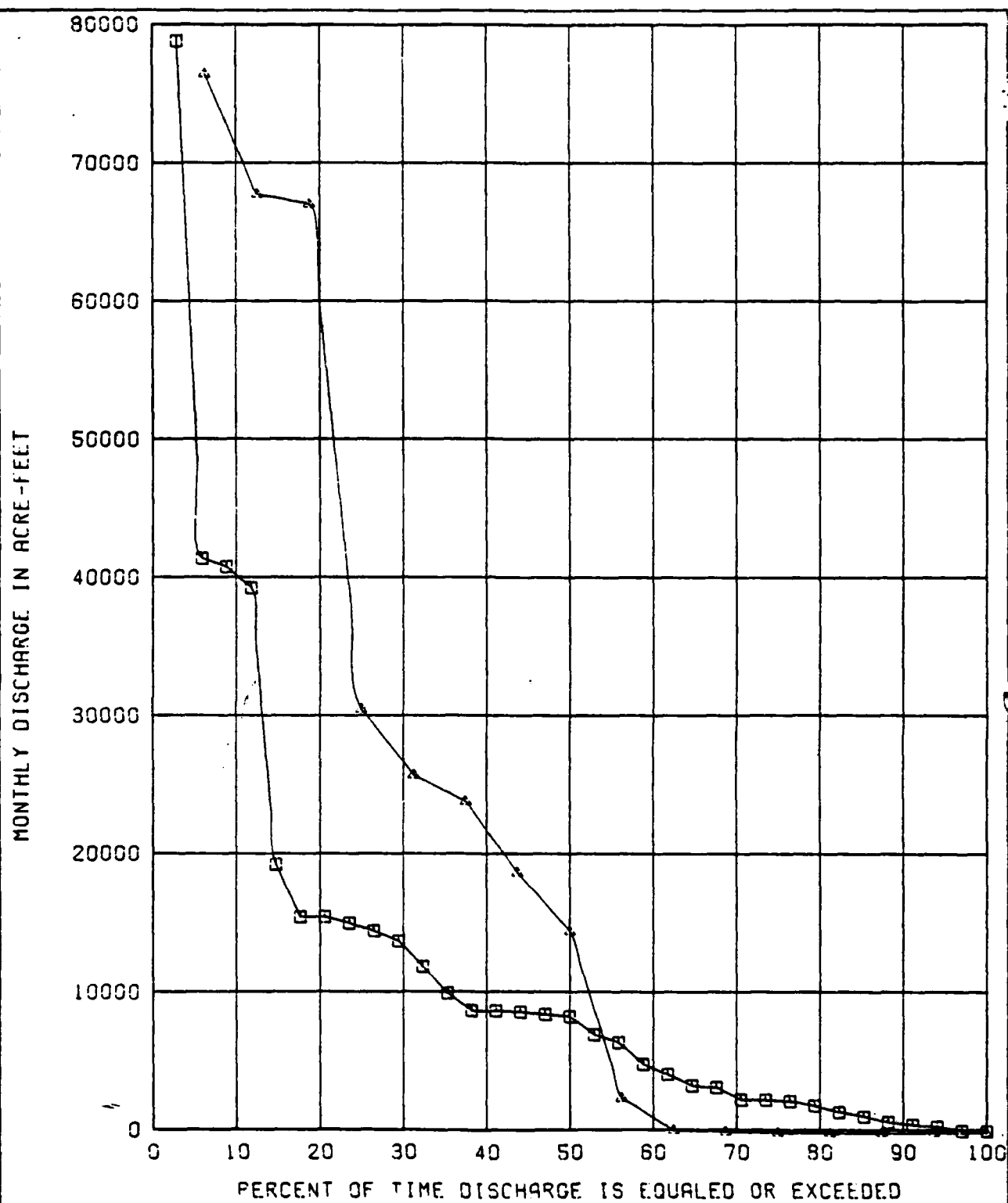
△ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1963-1979)

TRINITY RIVER BASIN, TEXAS
NAVARRO MILLS LAKE

FLOW DURATION CURVES AT DAM SITE
MAY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 17



LEGEND

□ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1957)

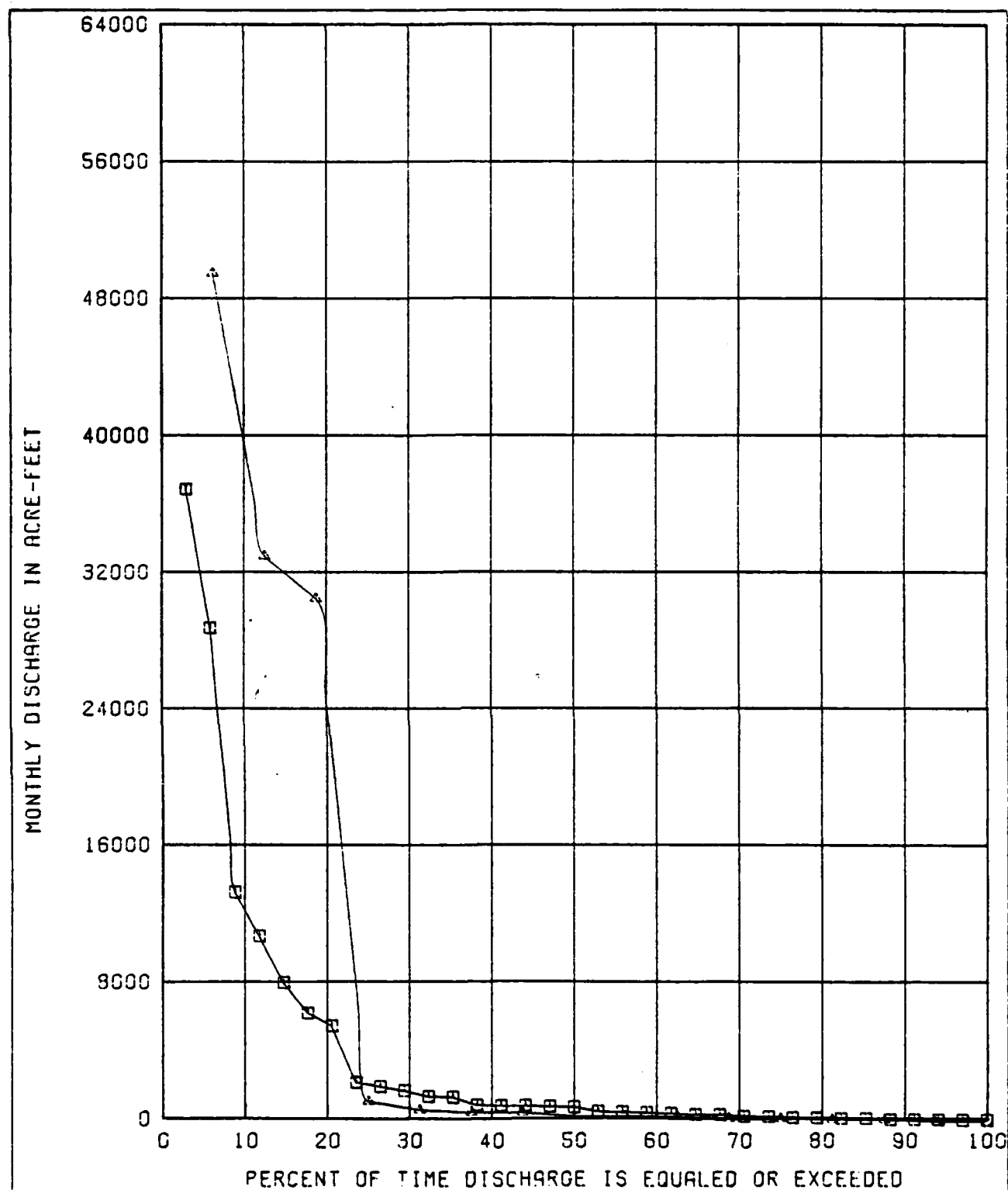
△ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

TRINITY RIVER BASIN, TEXAS
NAVARRO MILLS LAKE

FLOW DURATION CURVES AT DAM SITE
JUNE FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM LOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 18



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1957)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

TRINITY RIVER BASIN, TEXAS

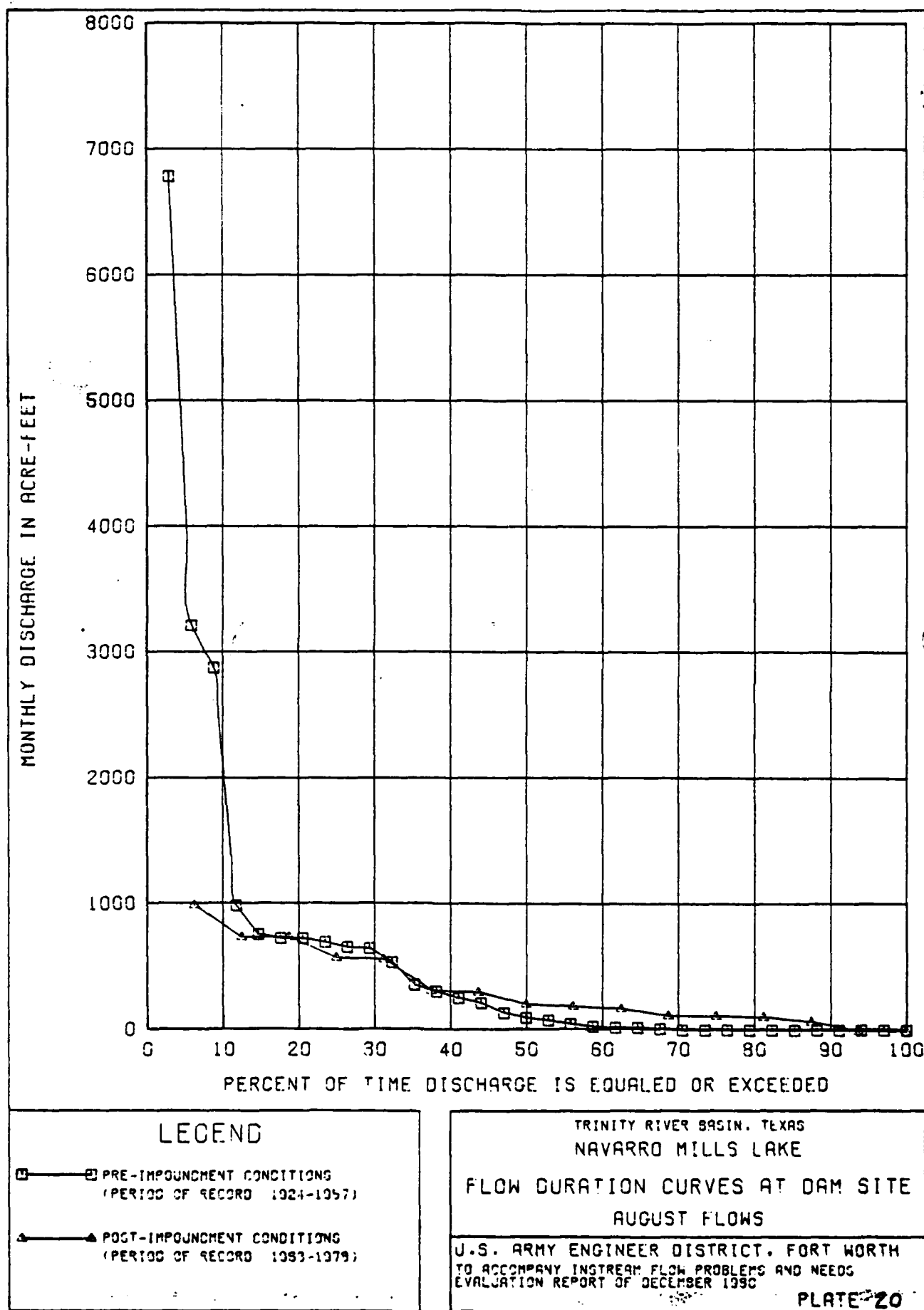
NAVARRO MILLS LAKE

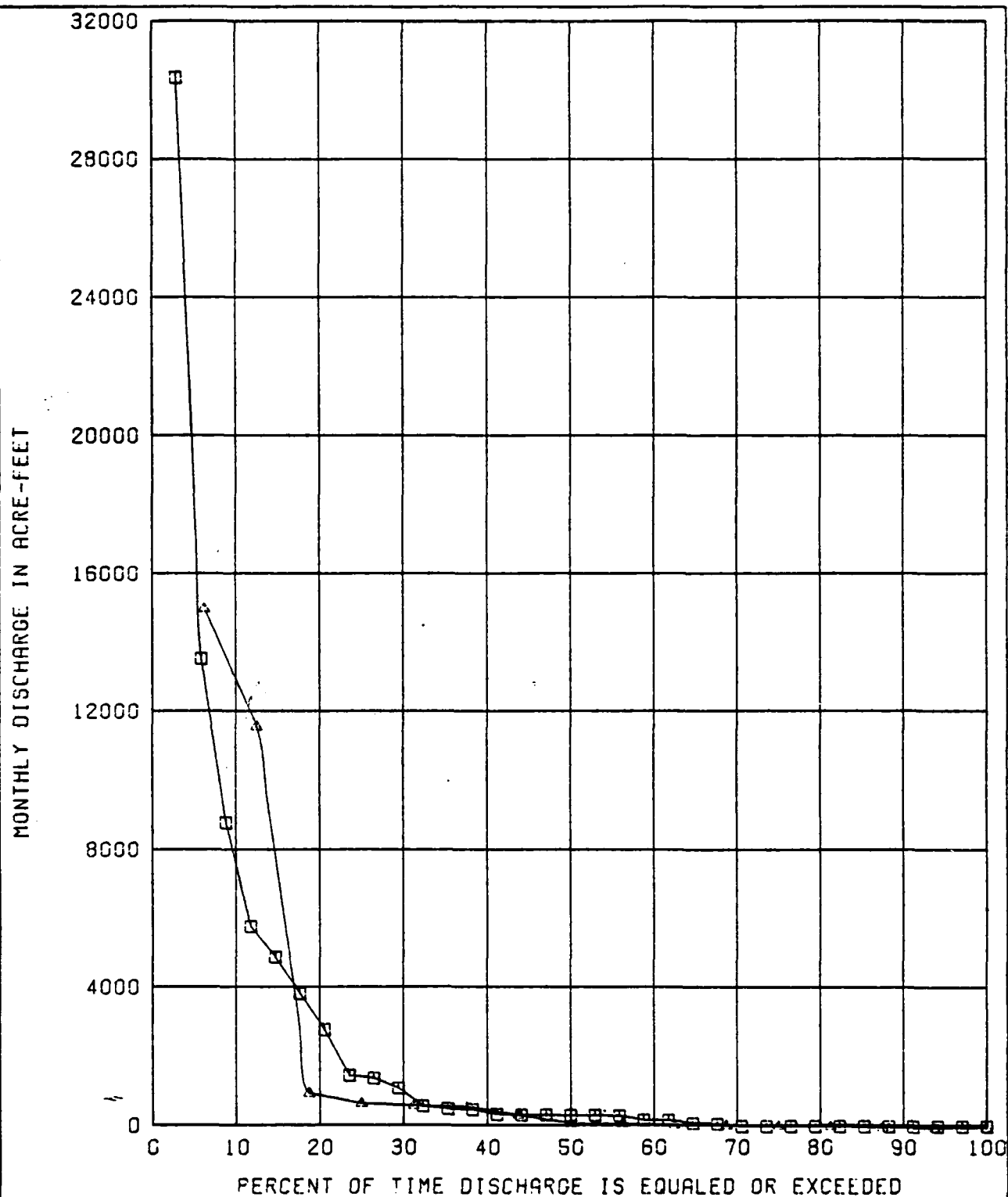
FLOW DURATION CURVES AT DAM SITE

JULY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 19





LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1957)

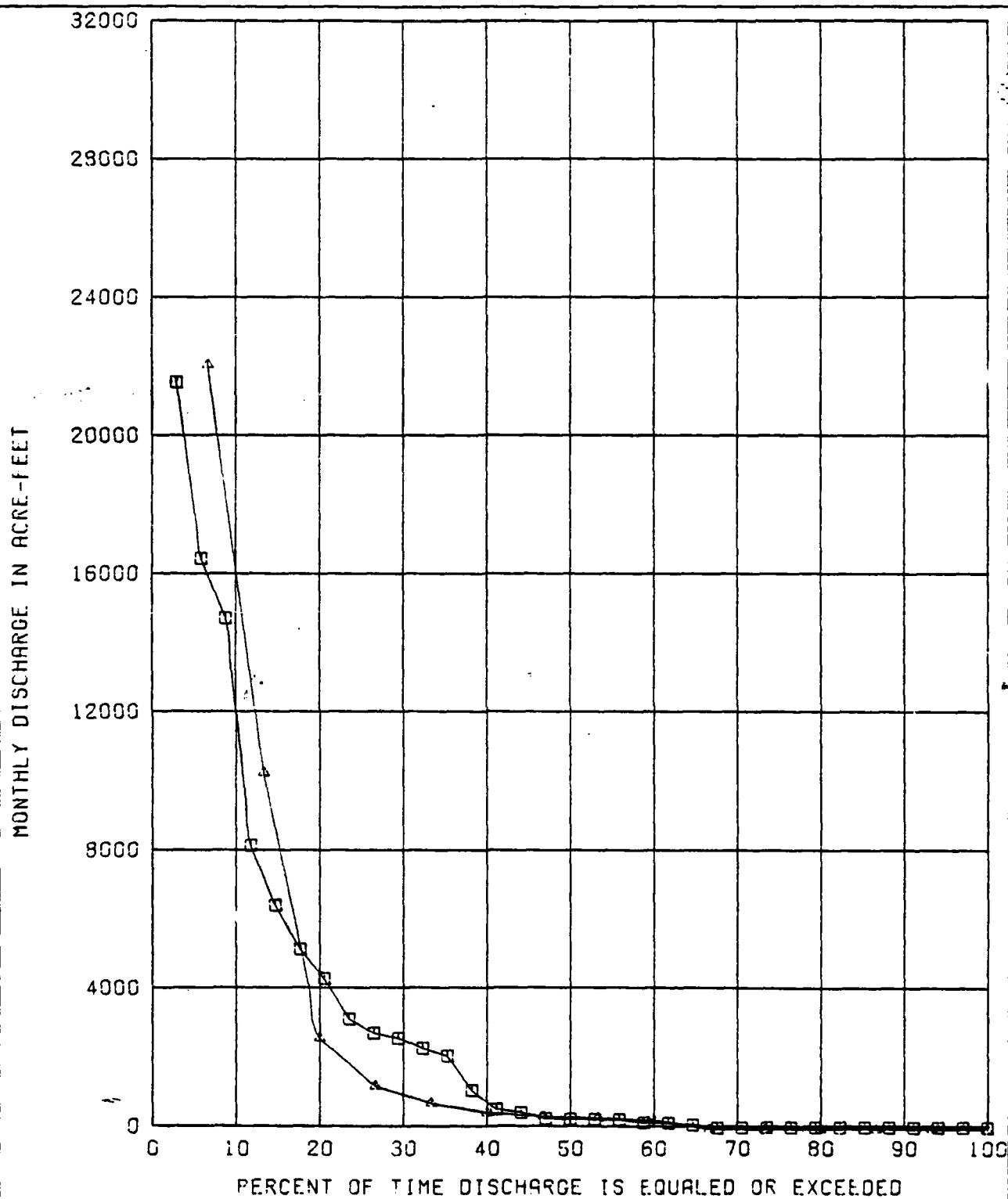
▲ — ▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

TRINITY RIVER BASIN, TEXAS
NAVARRO MILLS LAKE

FLOW DURATION CURVES AT DAM SITE
SEPTEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 21



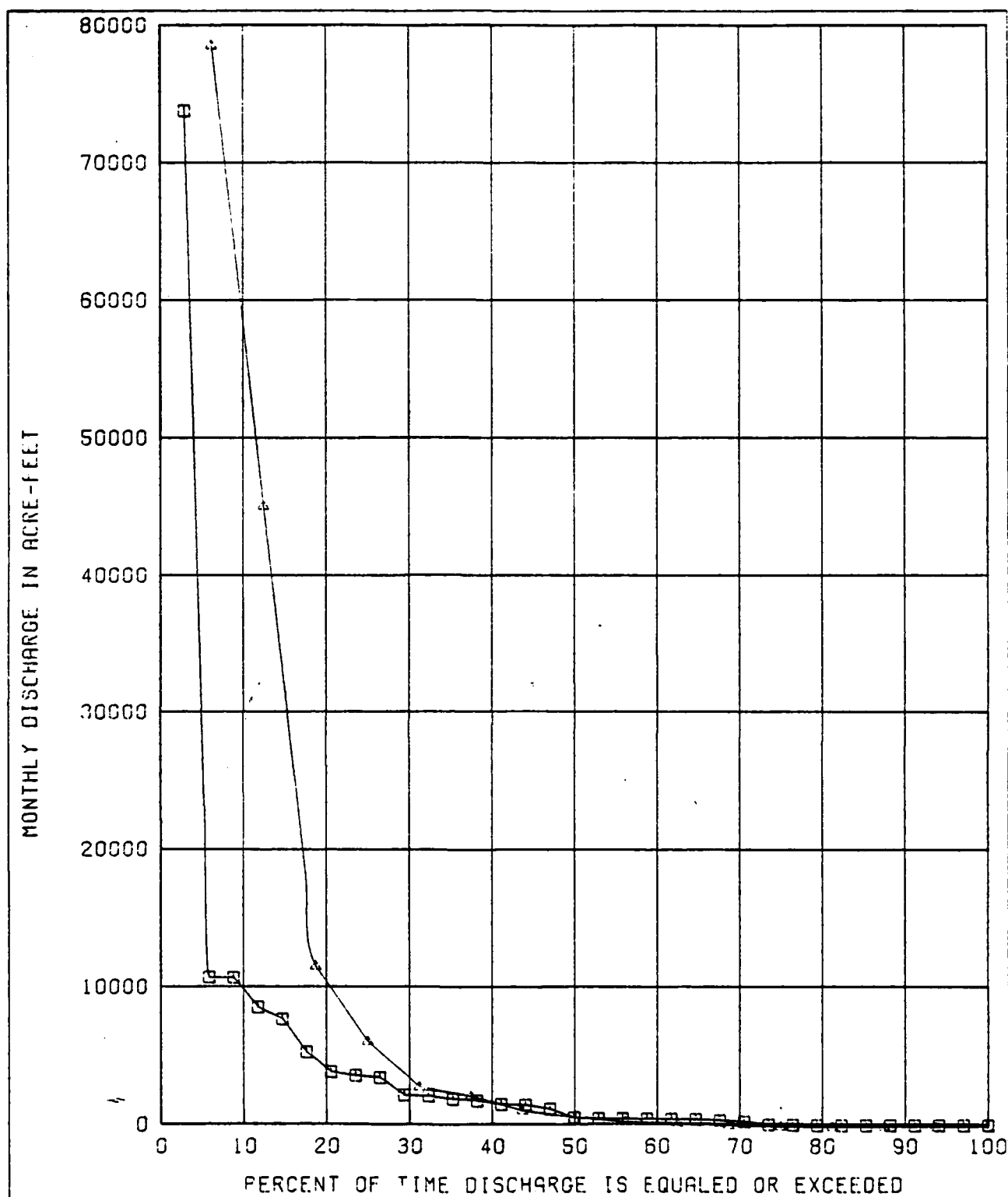
LEGEND

- — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1957)
- ▲ — ▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

TRINITY RIVER BASIN, TEXAS
NAVARRO MILLS LAKE

FLOW DURATION CURVES AT DAM SITE
OCTOBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990



LEGEND

□ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1957)

▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

TRINITY RIVER BASIN, TEXAS

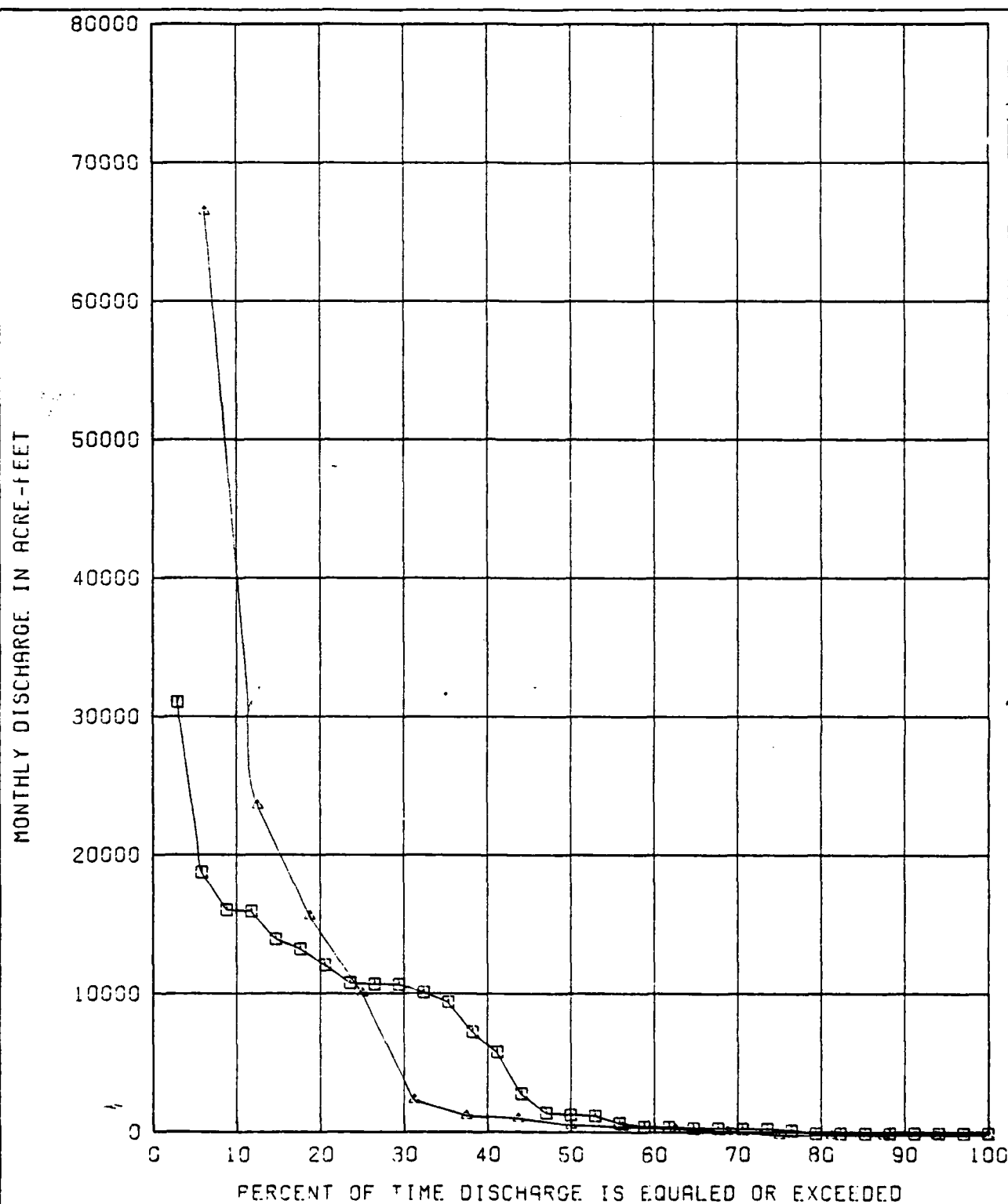
NAVARRO MILLS LAKE

FLOW DURATION CURVES AT DAM SITE

NOVEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 23



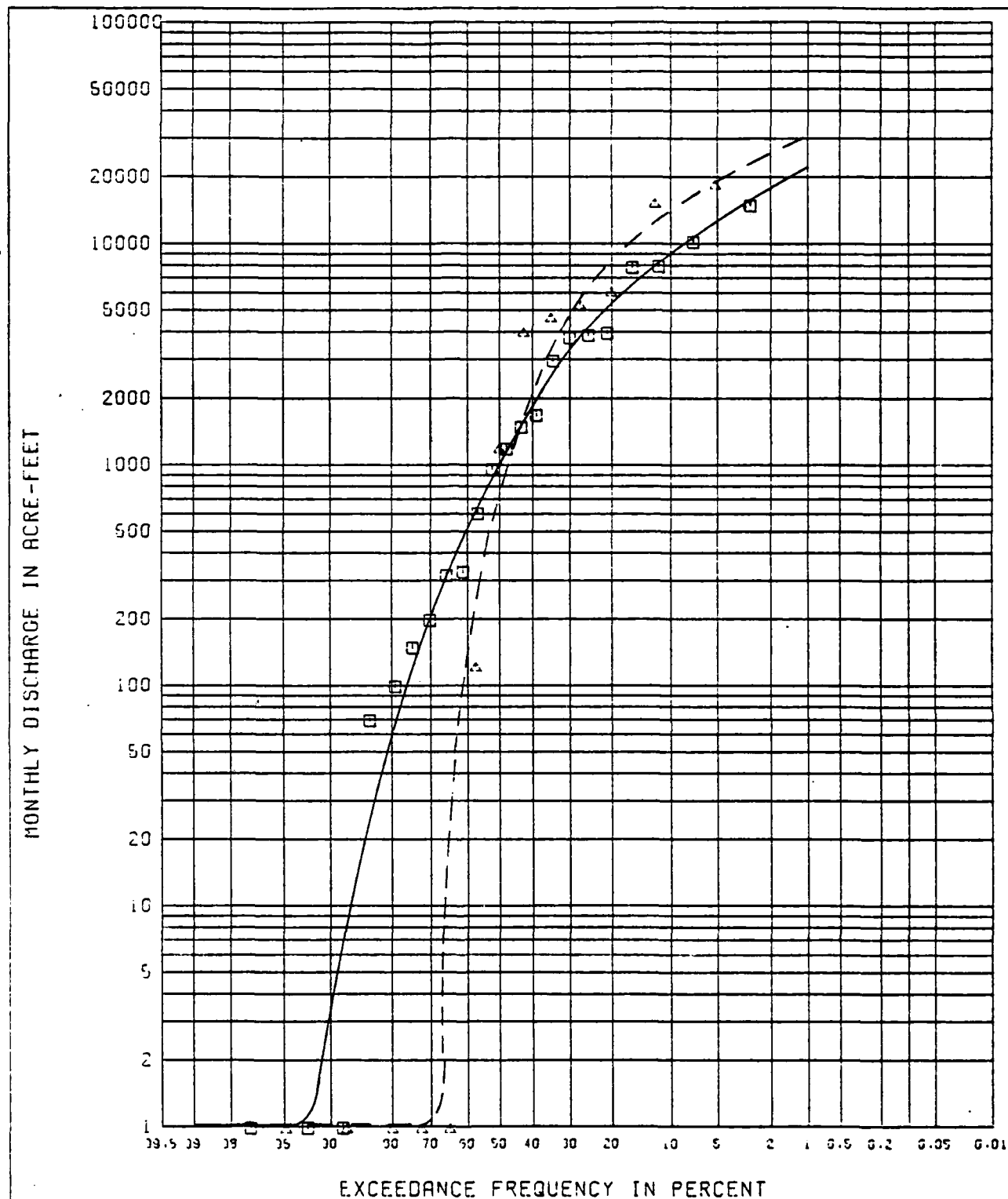
LEGEND

- — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1957)
- ▲ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

TRINITY RIVER BASIN, TEXAS
NAVARRO MILLS LAKE

FLOW DURATION CURVES AT DAM SITE
DECEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990



LEGEND

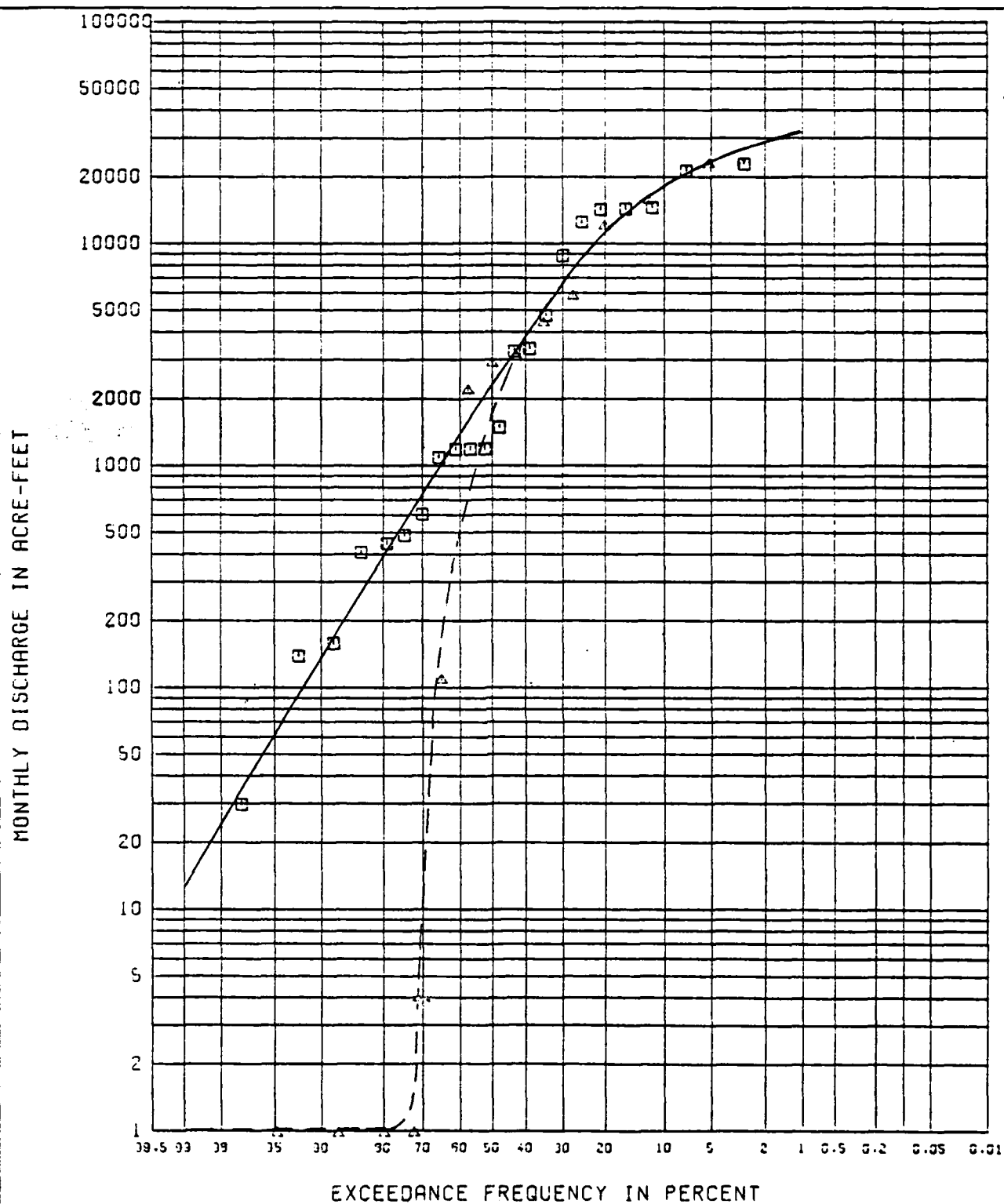
—■— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1939-1959)

-△- POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1969-1975)

TRINITY RIVER BASIN, TEXAS
BARDWELL LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
JANUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 1



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1939-1959)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1966-1979)

TRINITY RIVER BASIN, TEXAS

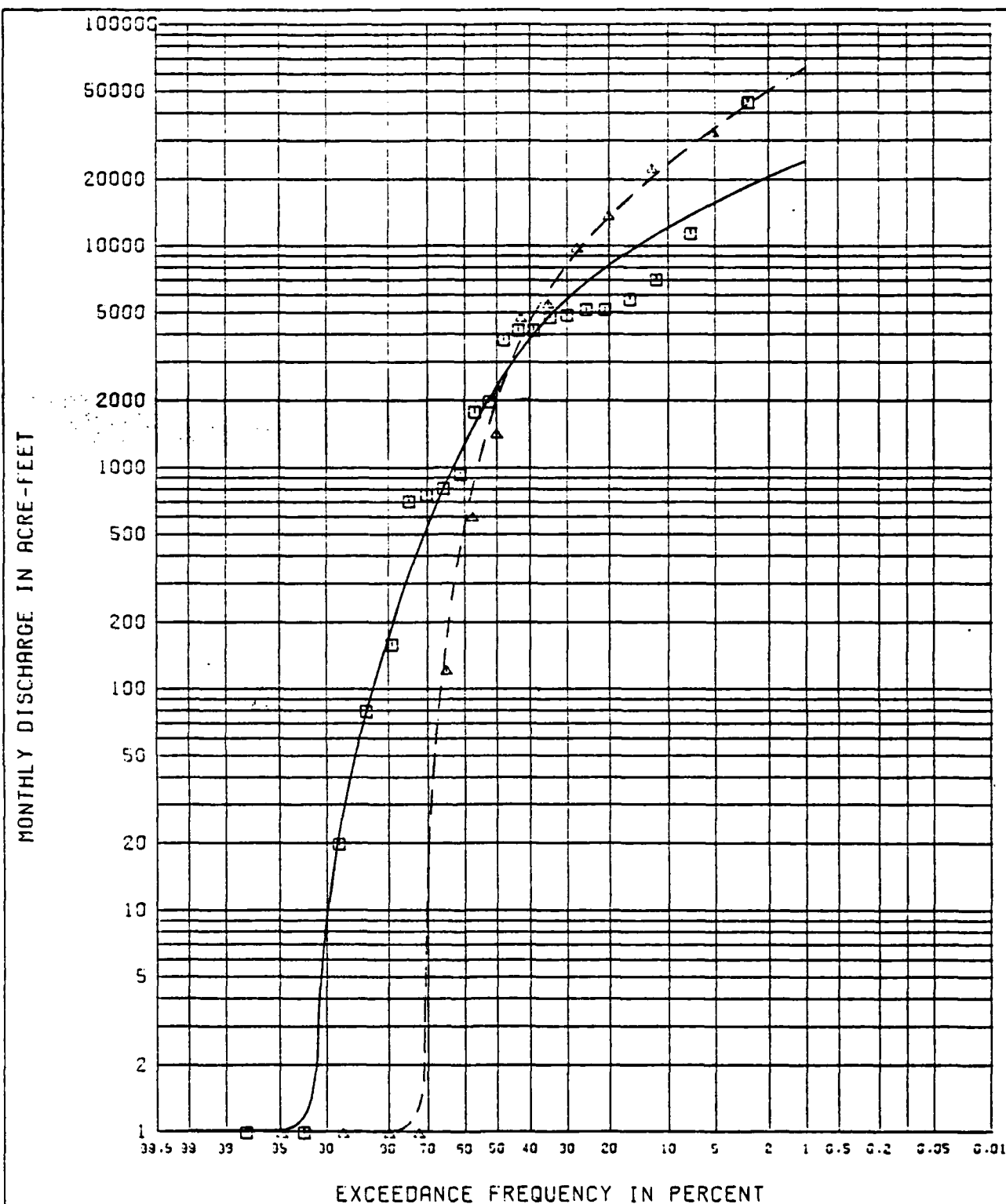
BARDWELL LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

FEBRUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 2



LEGEND

—■— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1939-1959)

- - -△- - POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1955-1975)

TRINITY RIVER BASIN, TEXAS

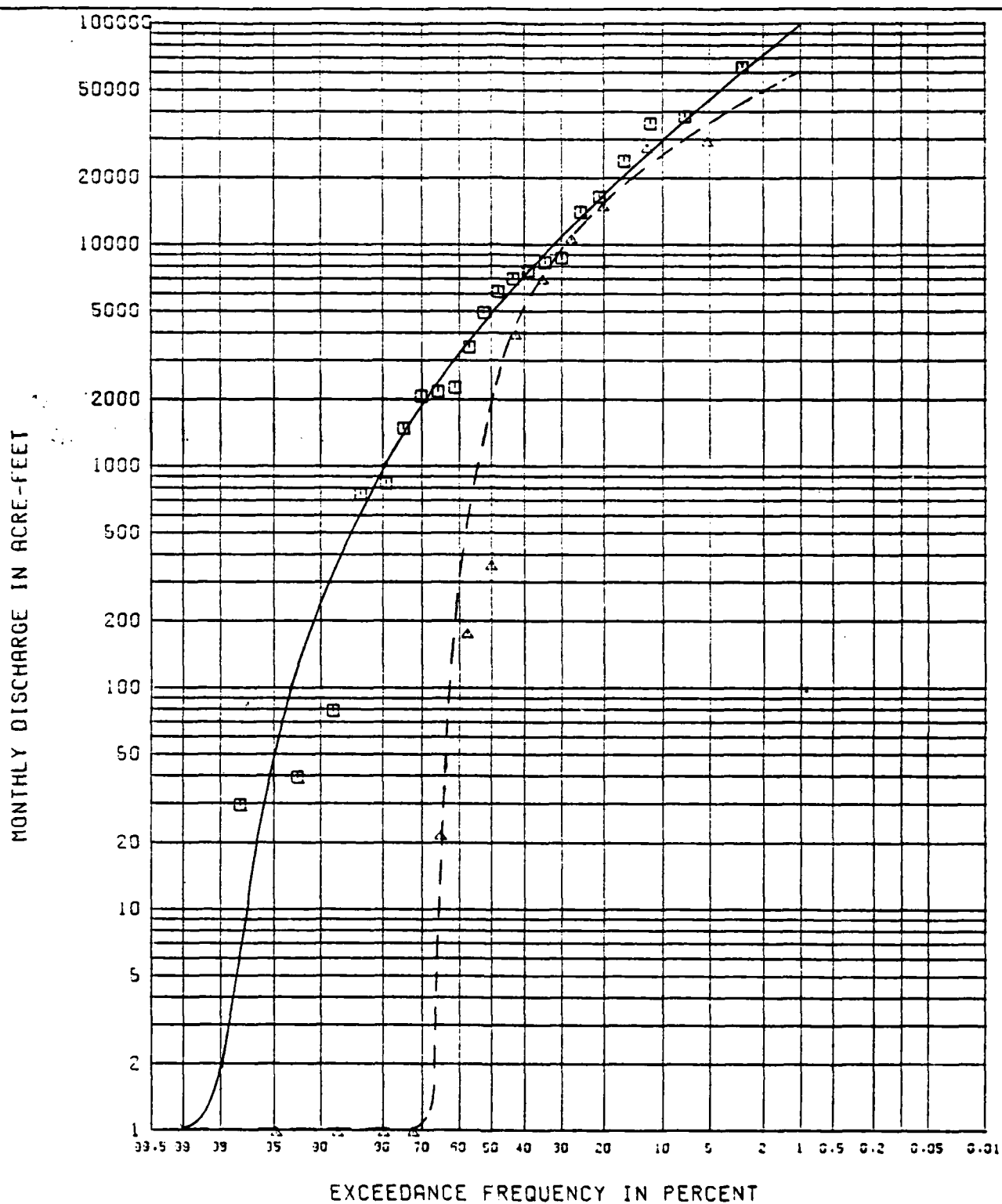
BARDWELL LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

MARCH FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 3



LEGEND

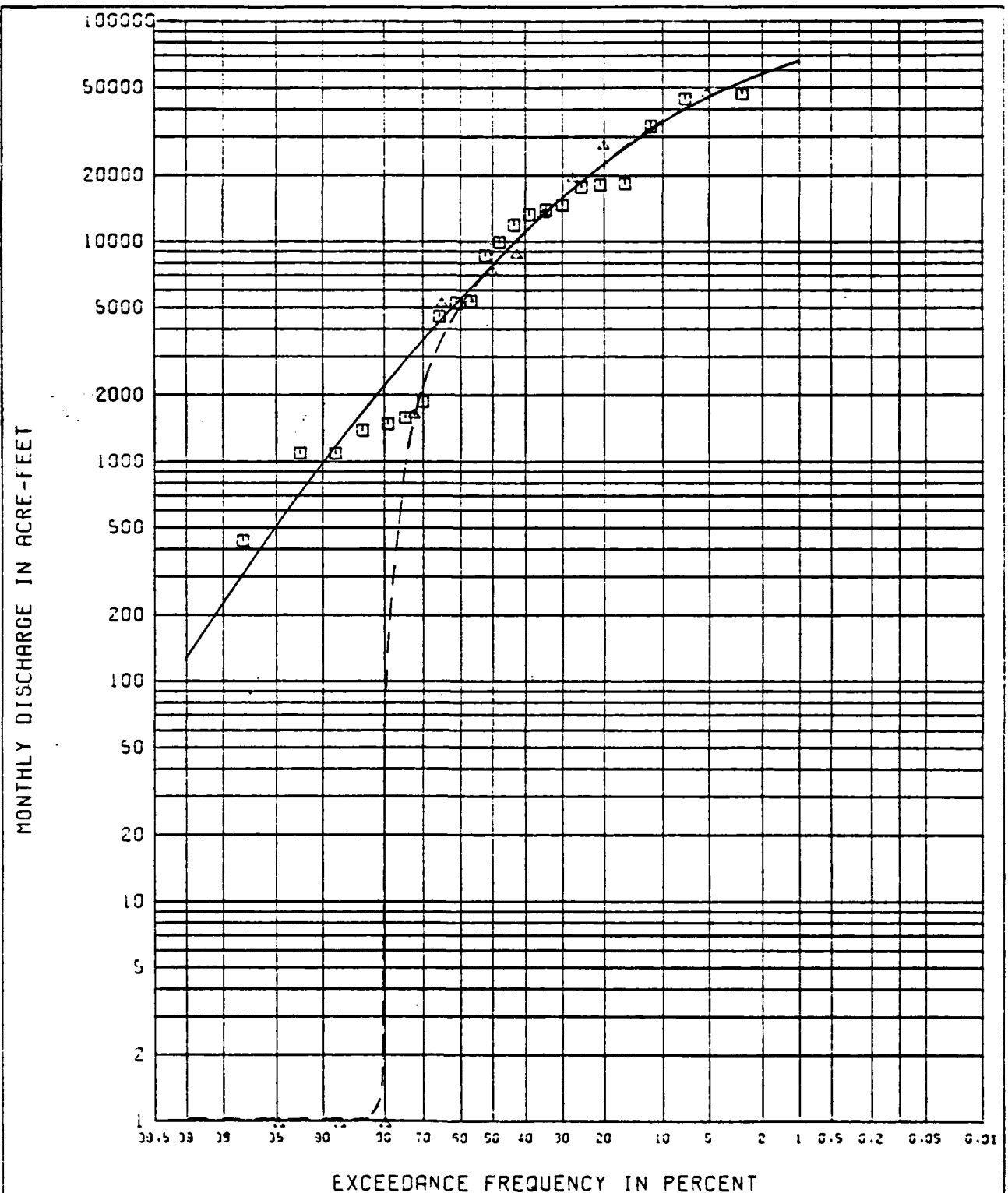
—□— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1930-1959)

—△— POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1956-1979)

TRINITY RIVER BASIN, TEXAS
BARDWELL LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
APRIL FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 4



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1939-1959)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1955-1979)

TRINITY RIVER BASIN, TEXAS

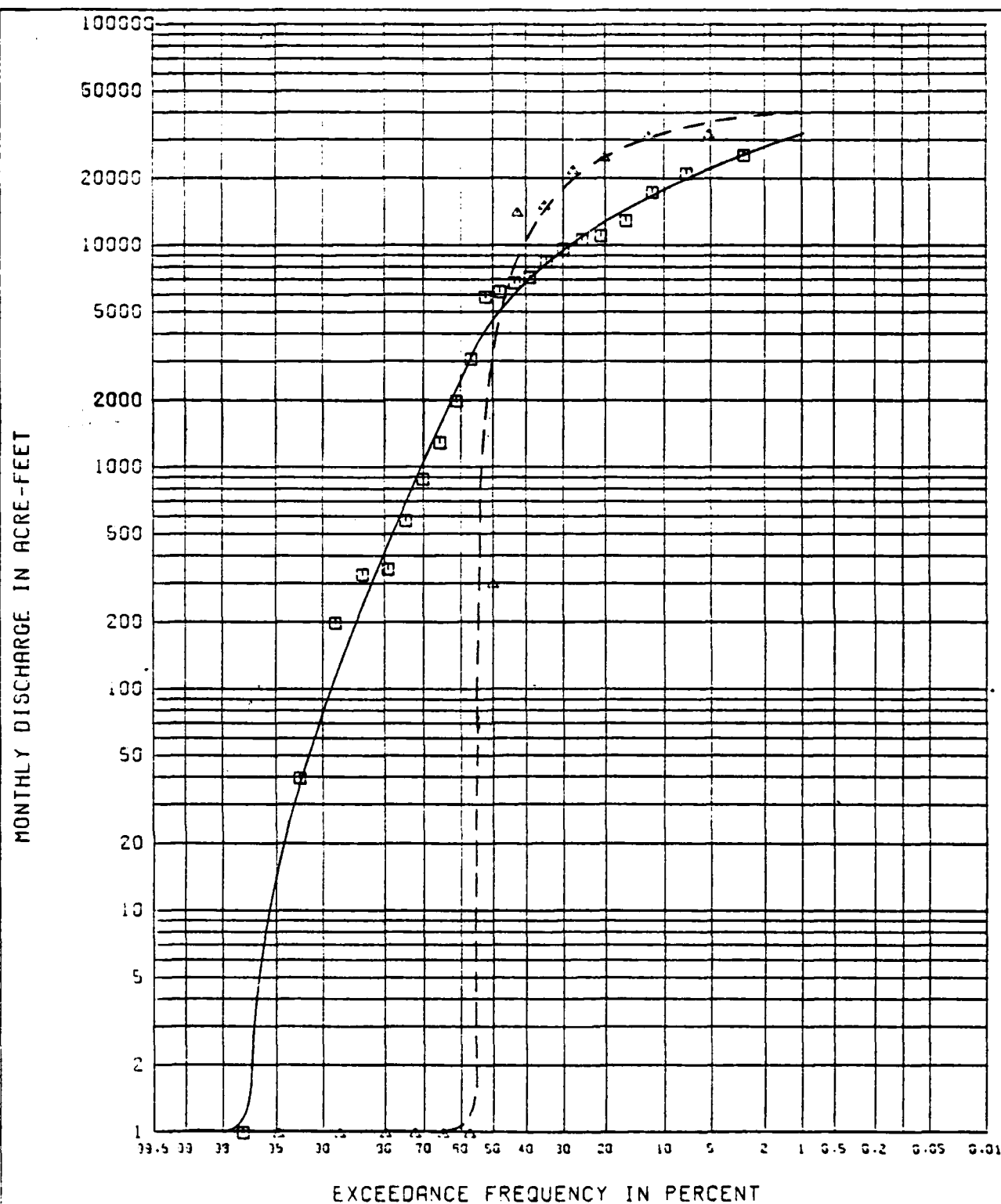
BARDWELL LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

MAY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 5



LEGEND

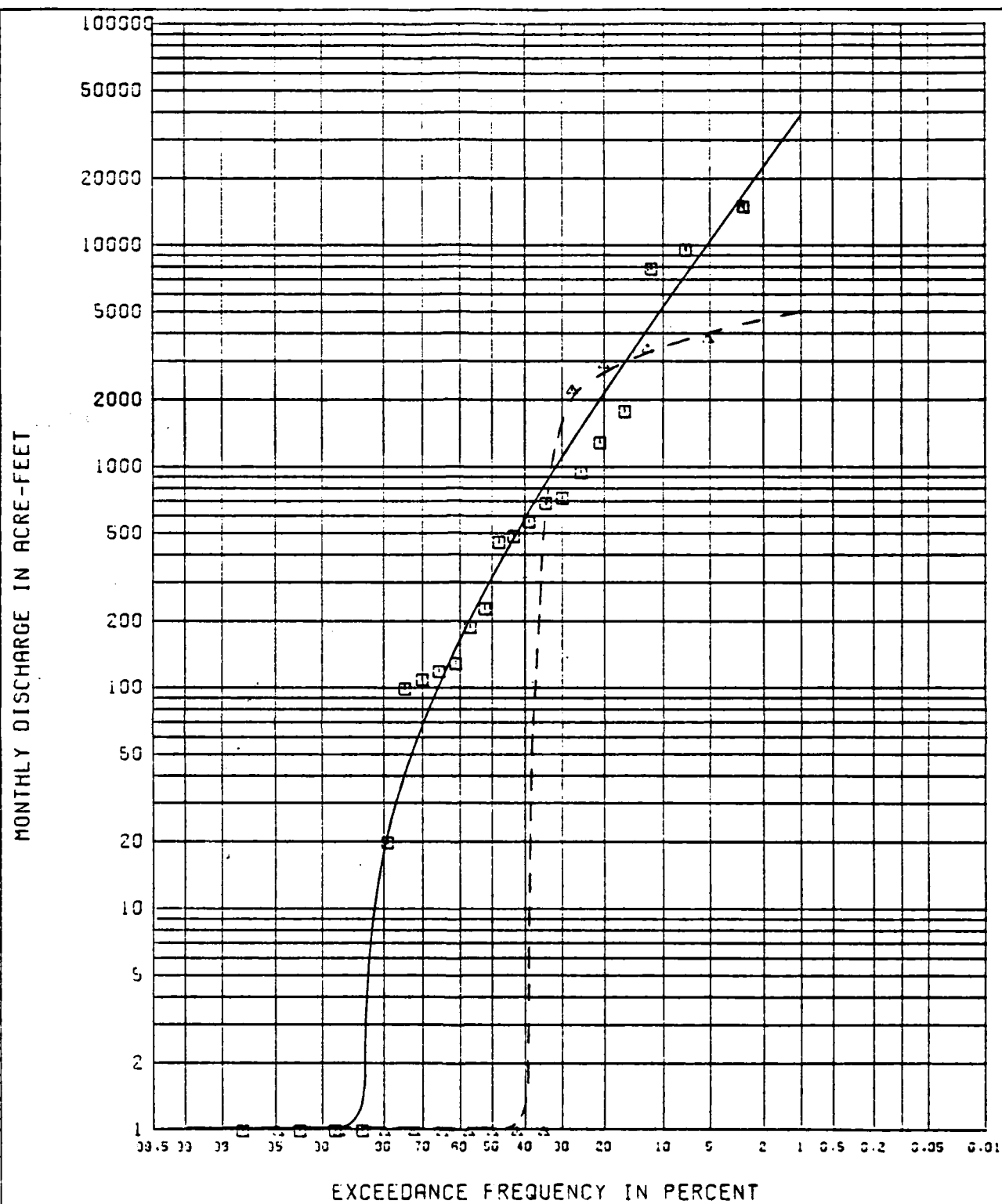
—■— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1939-1959)

-▲- POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1956-1979)

TRINITY RIVER BASIN, TEXAS
BARDWELL LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
JUNE FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 6



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1939-1959)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1959-1979)

TRINITY RIVER BASIN, TEXAS

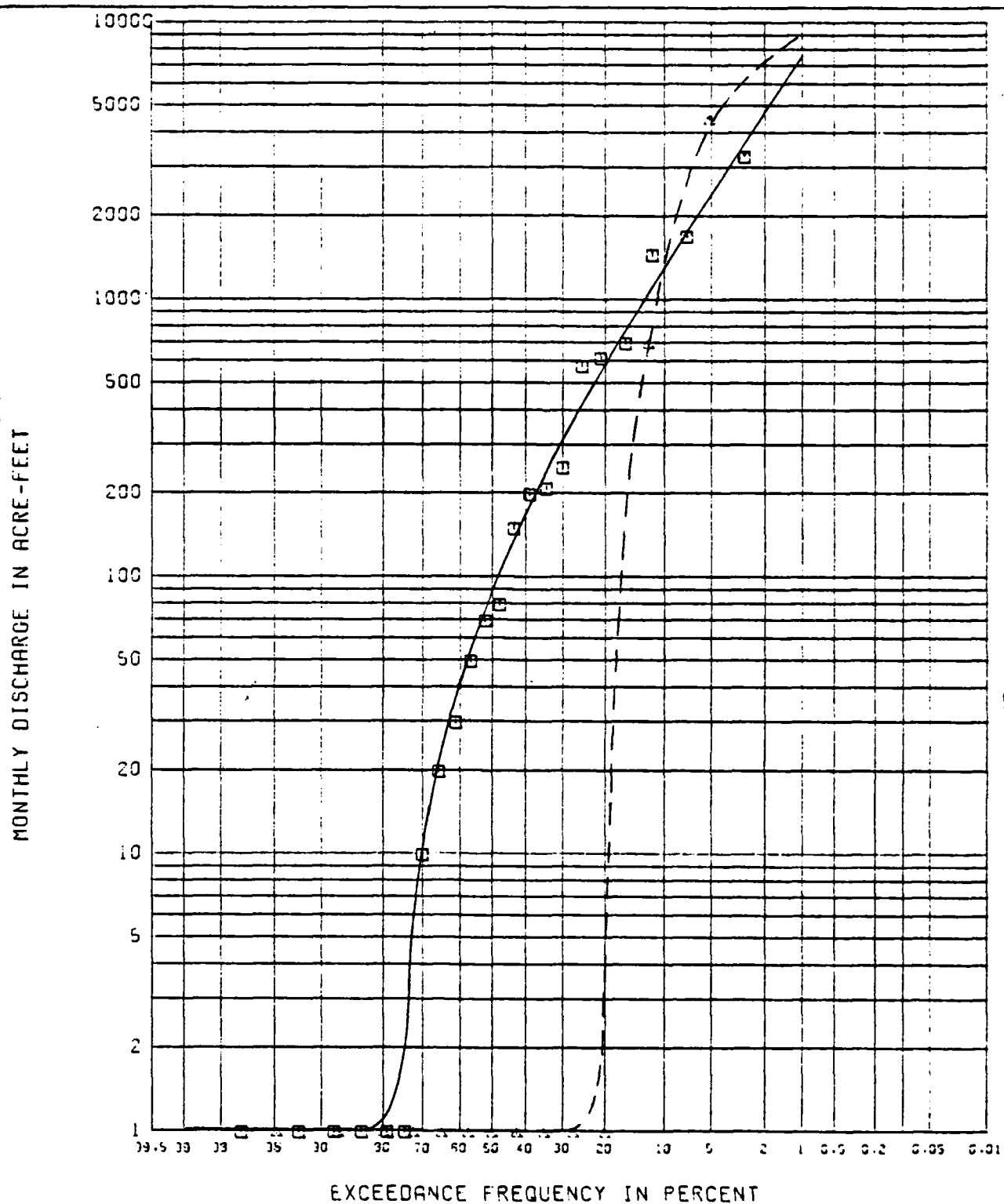
BARDWELL LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

JULY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 7



LEGEND

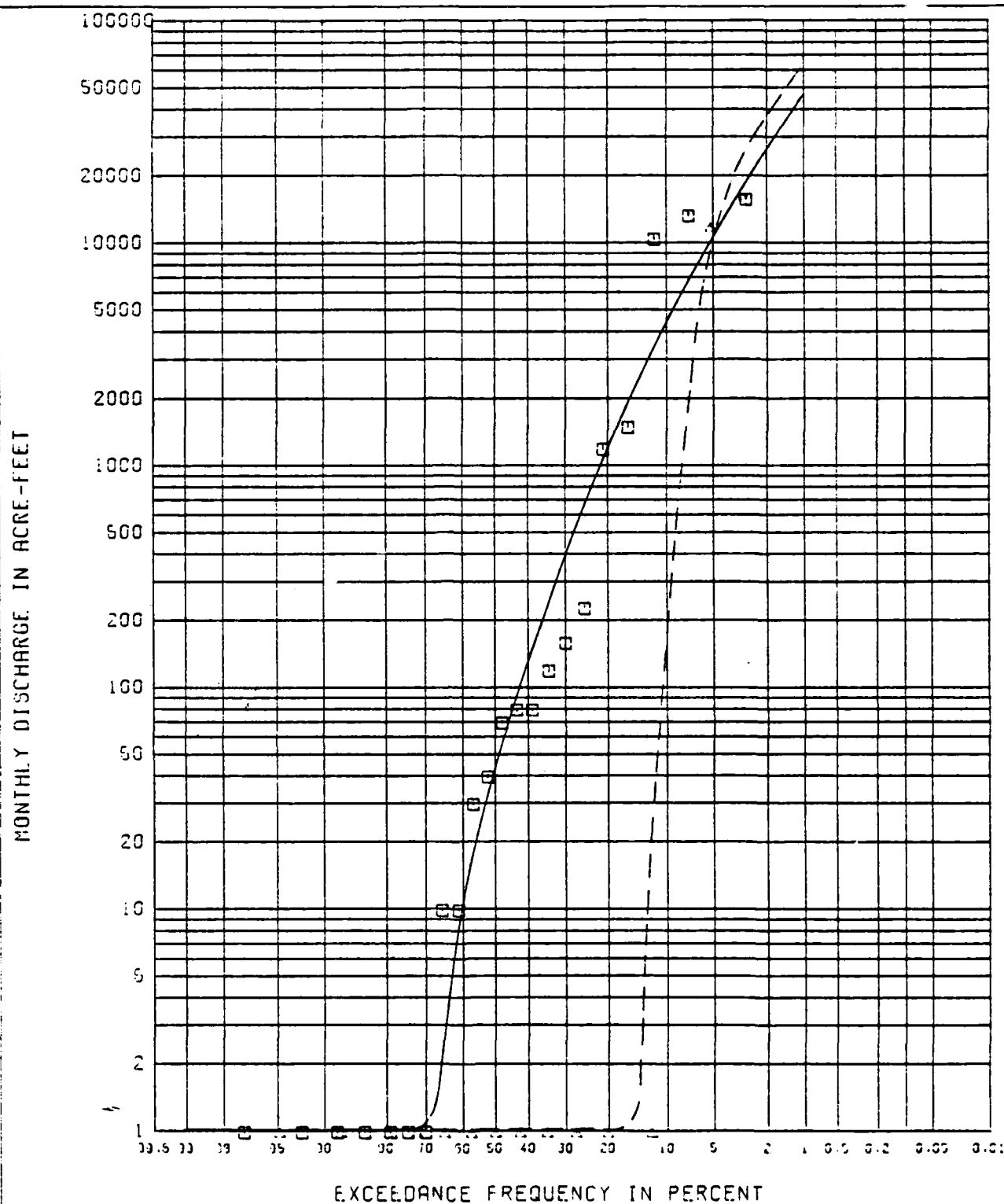
□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1933-1953)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1955-1975)

TRINITY RIVER BASIN, TEXAS
BARDWELL LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
AUGUST FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 8



LEGEND

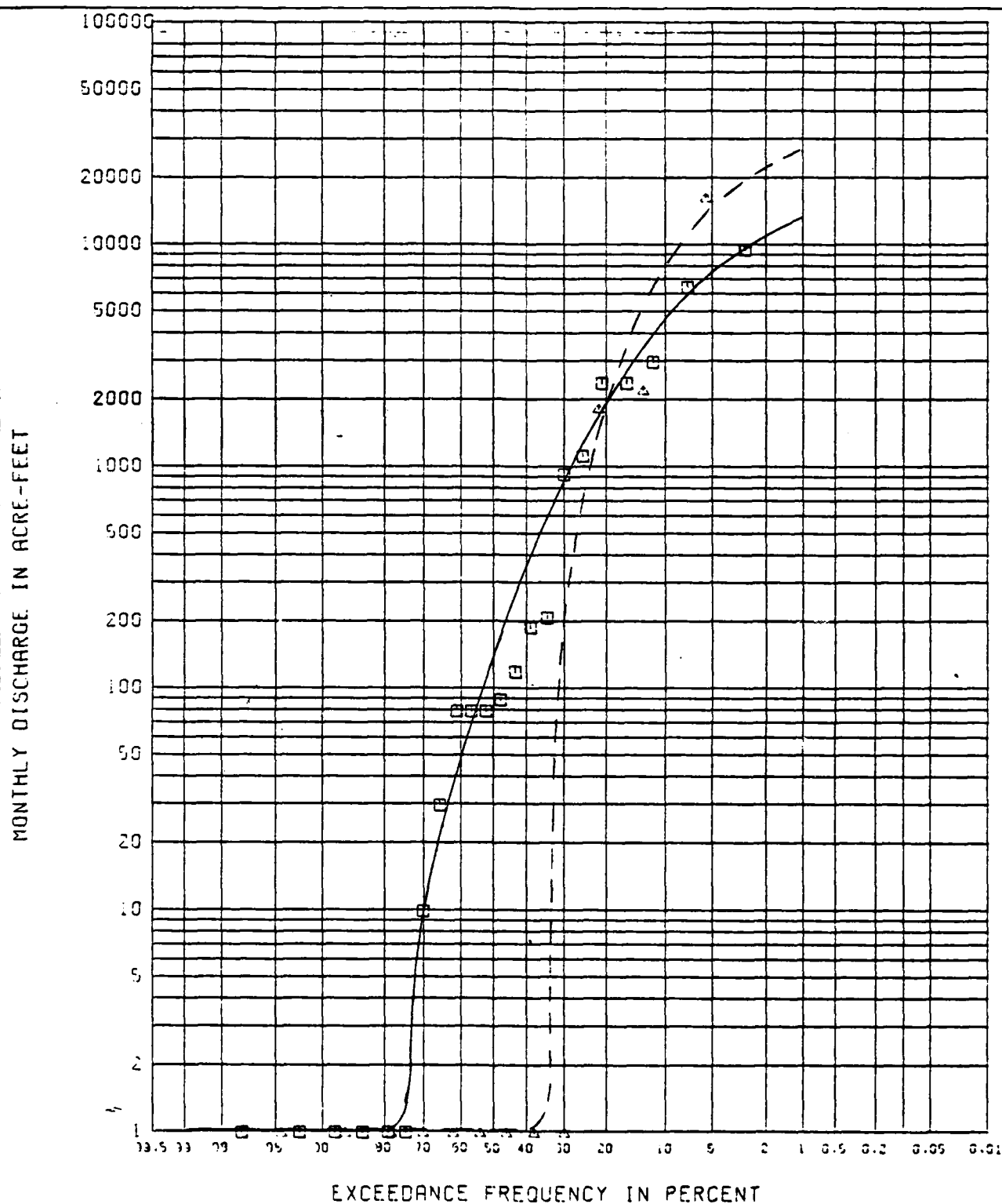
—■— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1933-1953)

- - -■- POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1955-1975)

TRINITY RIVER BASIN, TEXAS
BARDWELL LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
SEPTEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 9



LEGEND

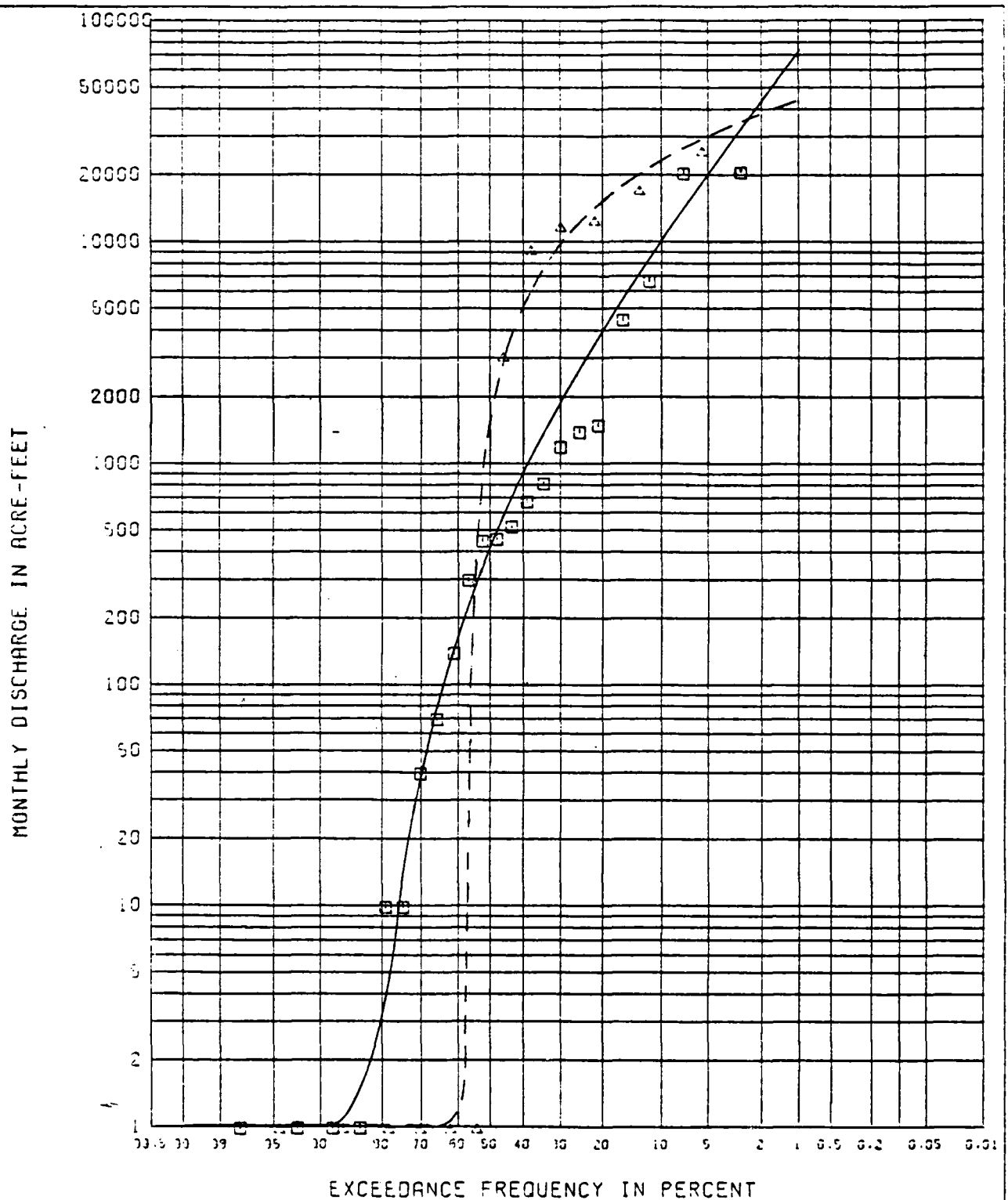
□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1933-1959)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1959-1975)

TRINITY RIVER BASIN, TEXAS
BARDWELL LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
OCTOBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 10



LEGEND

□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1939-1953)

△ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1955-1979)

TRINITY RIVER BASIN, TEXAS

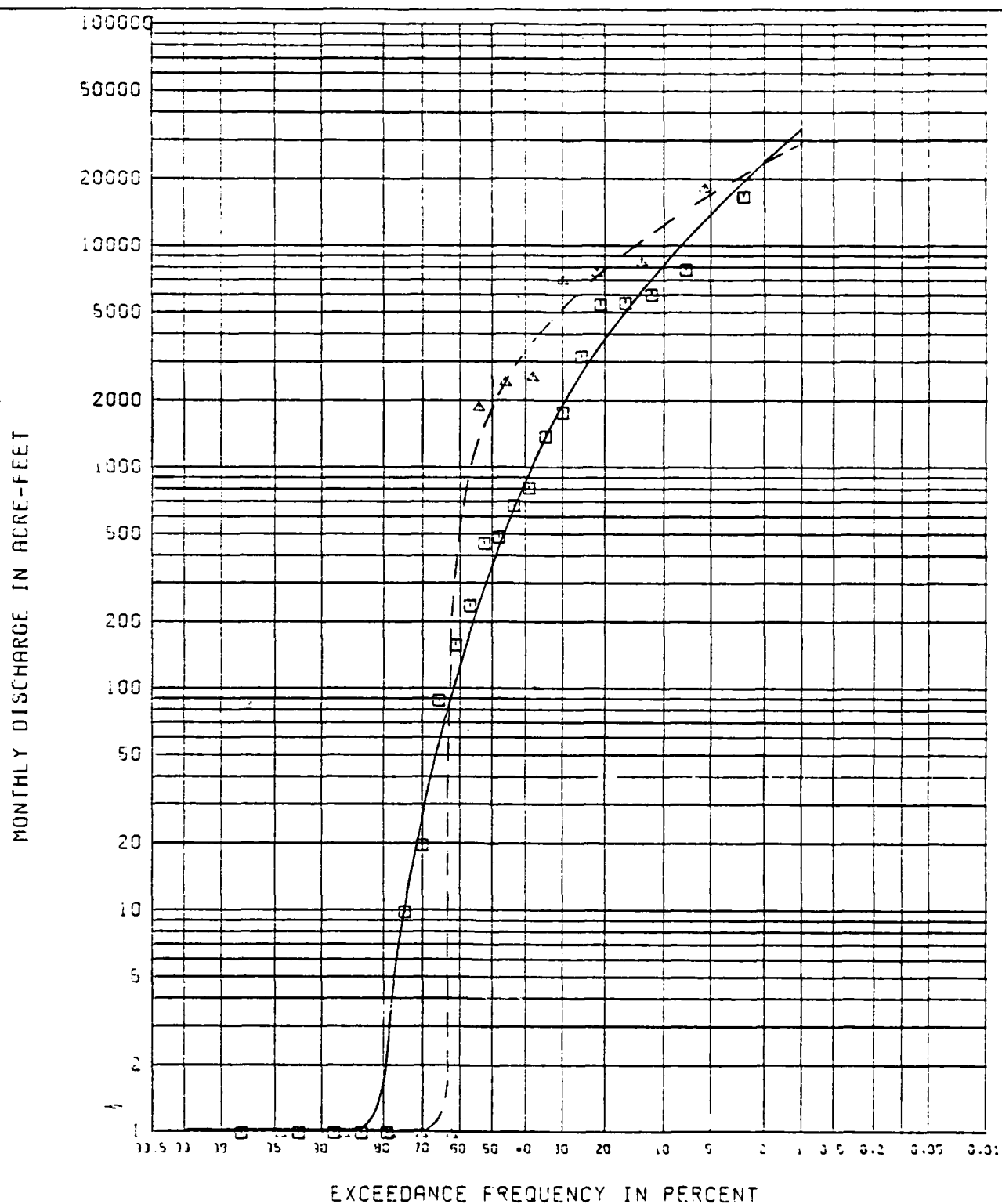
BARDWELL LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

NOVEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE II



LEGEND

—■— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1939-1959)

-▲- POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1965-1975)

TRINITY RIVER BASIN, TEXAS

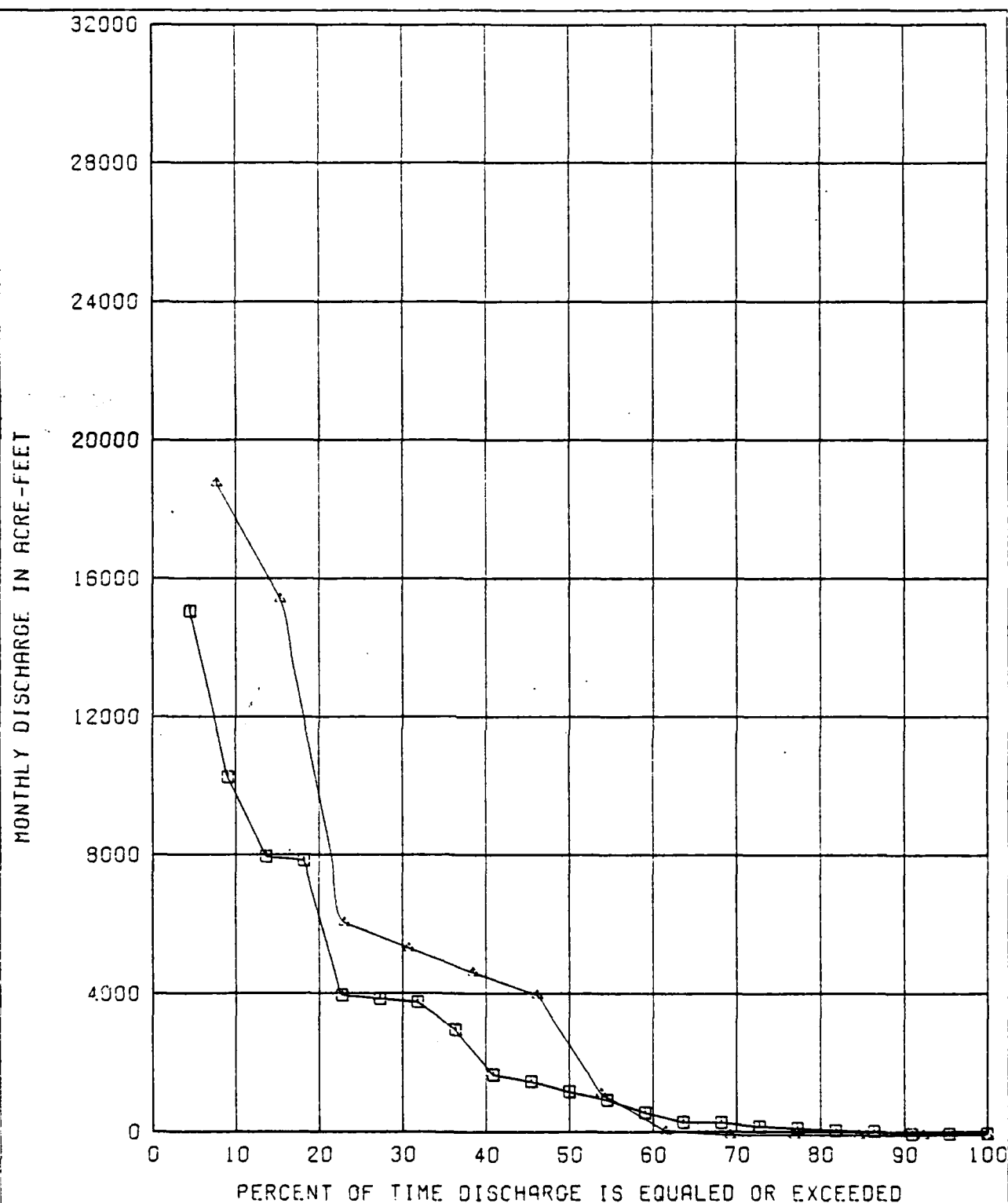
BARDWELL LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

DECEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 12



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1939-1959)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1965-1975)

TRINITY RIVER BASIN, TEXAS

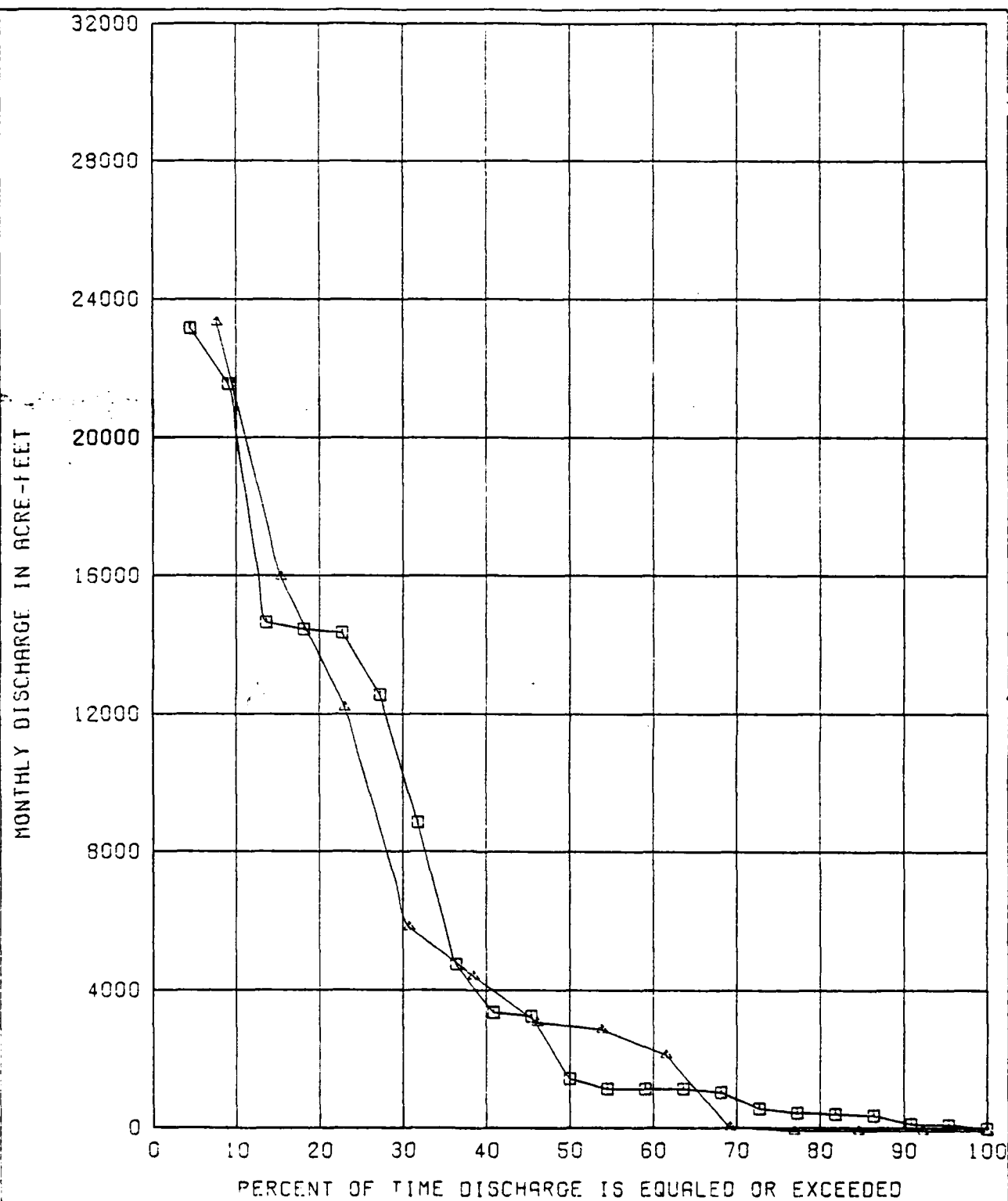
BARDWELL LAKE

FLOW DURATION CURVES AT DAM SITE

JANUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 13



LEGEND

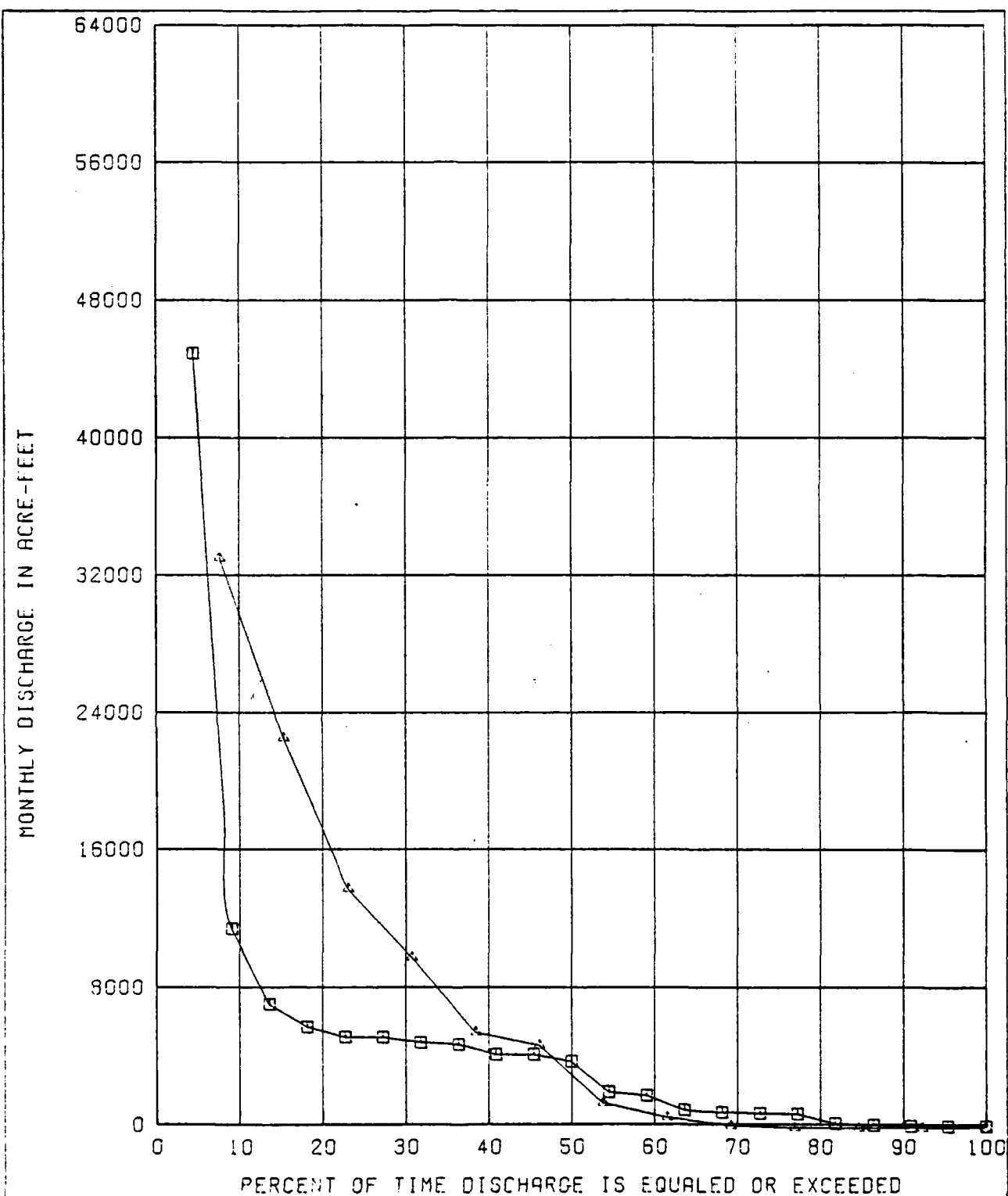
- PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1939-1953)
- △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1966-1975)

TRINITY RIVER BASIN, TEXAS
BARDWELL LAKE

FLOW DURATION CURVES AT DAM SITE
FEBRUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 14



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1939-1953)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1955-1975)

TRINITY RIVER BASIN, TEXAS

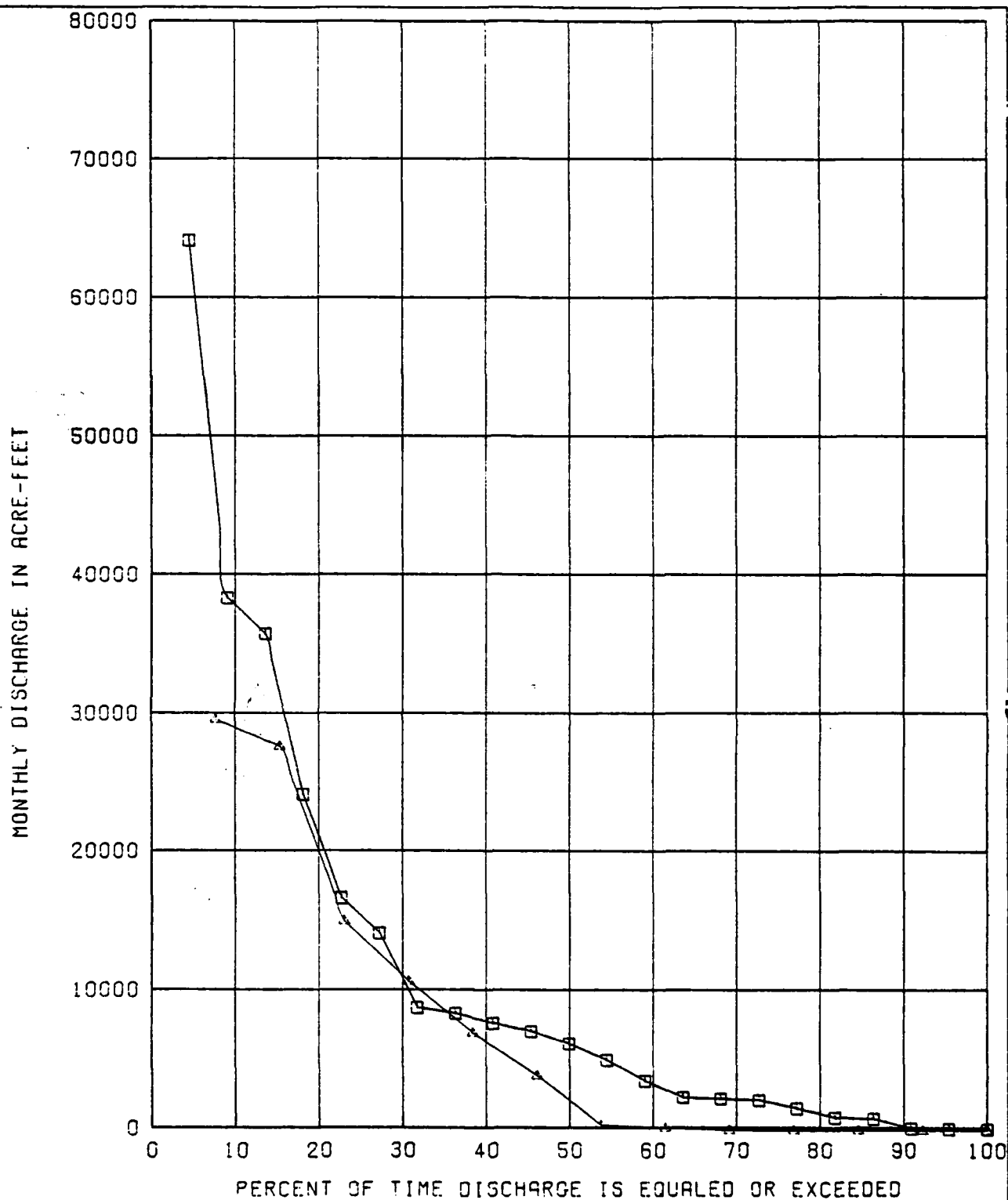
BARDWELL LAKE

FLOW DURATION CURVES AT DAM SITE

MARCH FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 15



LEGEND

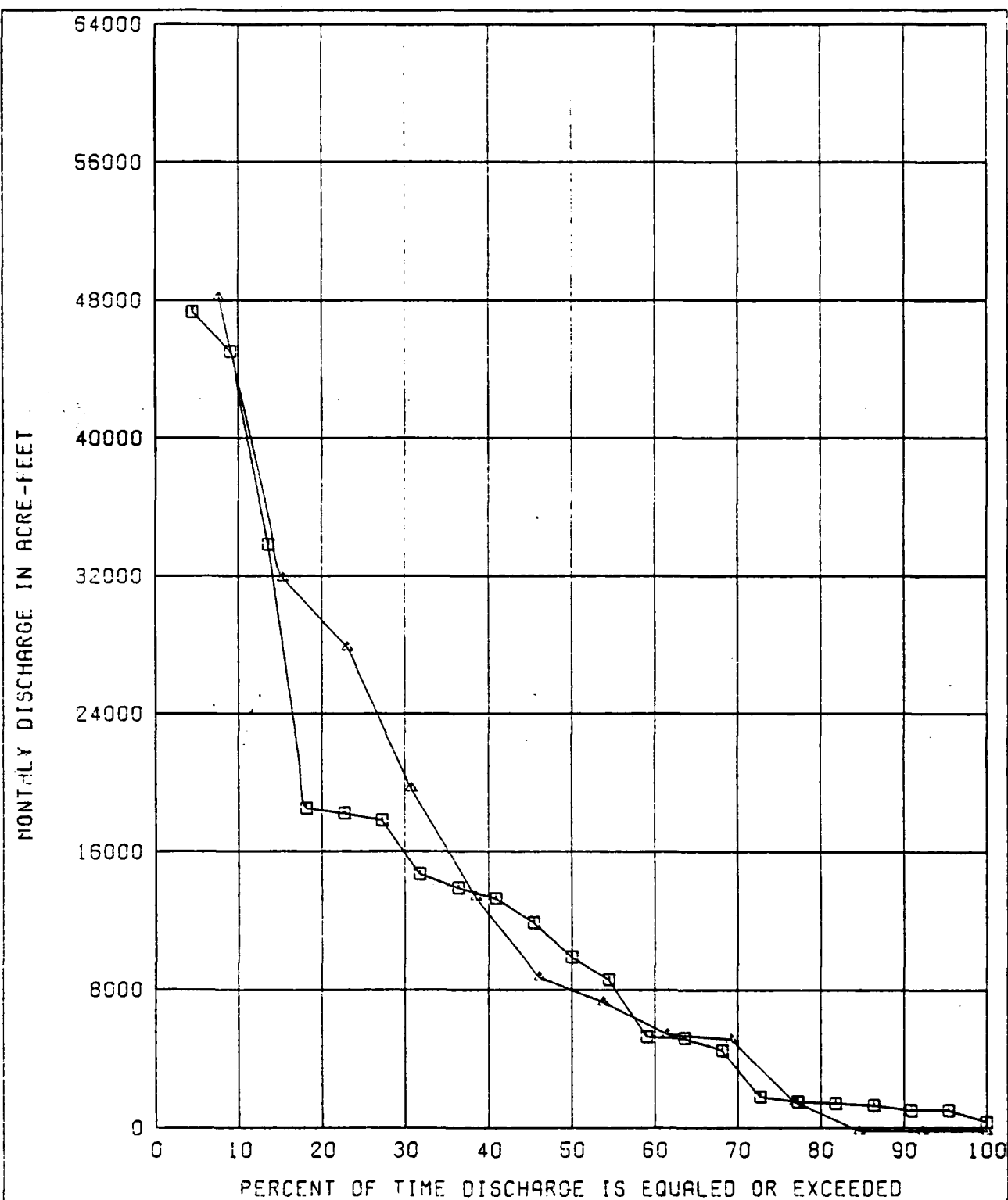
- — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1939-1959)
- △ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1966-1979)

TRINITY RIVER BASIN, TEXAS
BARDWELL LAKE

FLOW DURATION CURVES AT DAM SITE
APRIL FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 16



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1933-1953)

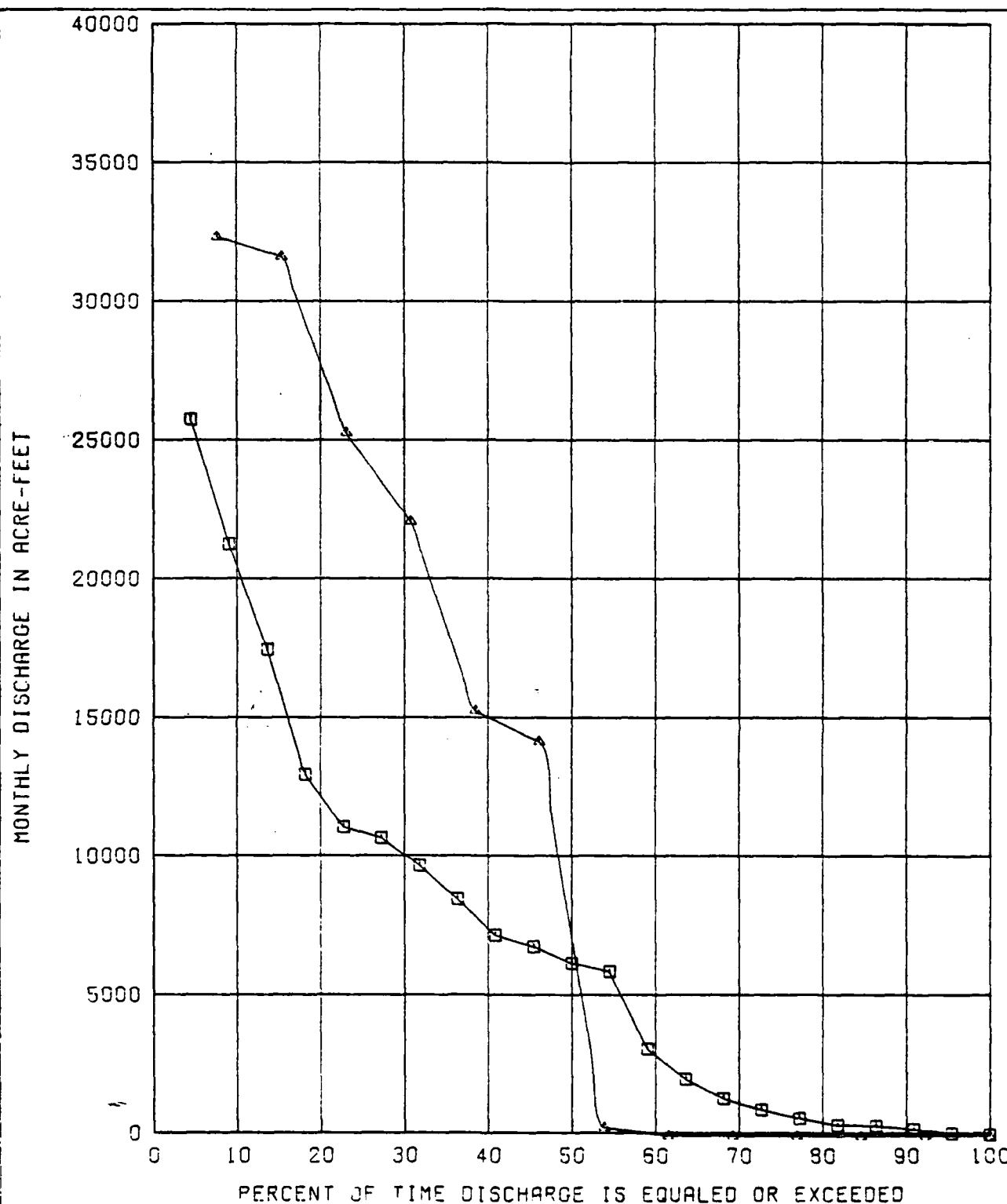
△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1955-1975)

TRINITY RIVER BASIN, TEXAS
BARDWELL LAKE

FLOW DURATION CURVES AT DAM SITE
MAY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 17



LEGEND

□ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1939-1953)

▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1955-1979)

TRINITY RIVER BASIN, TEXAS

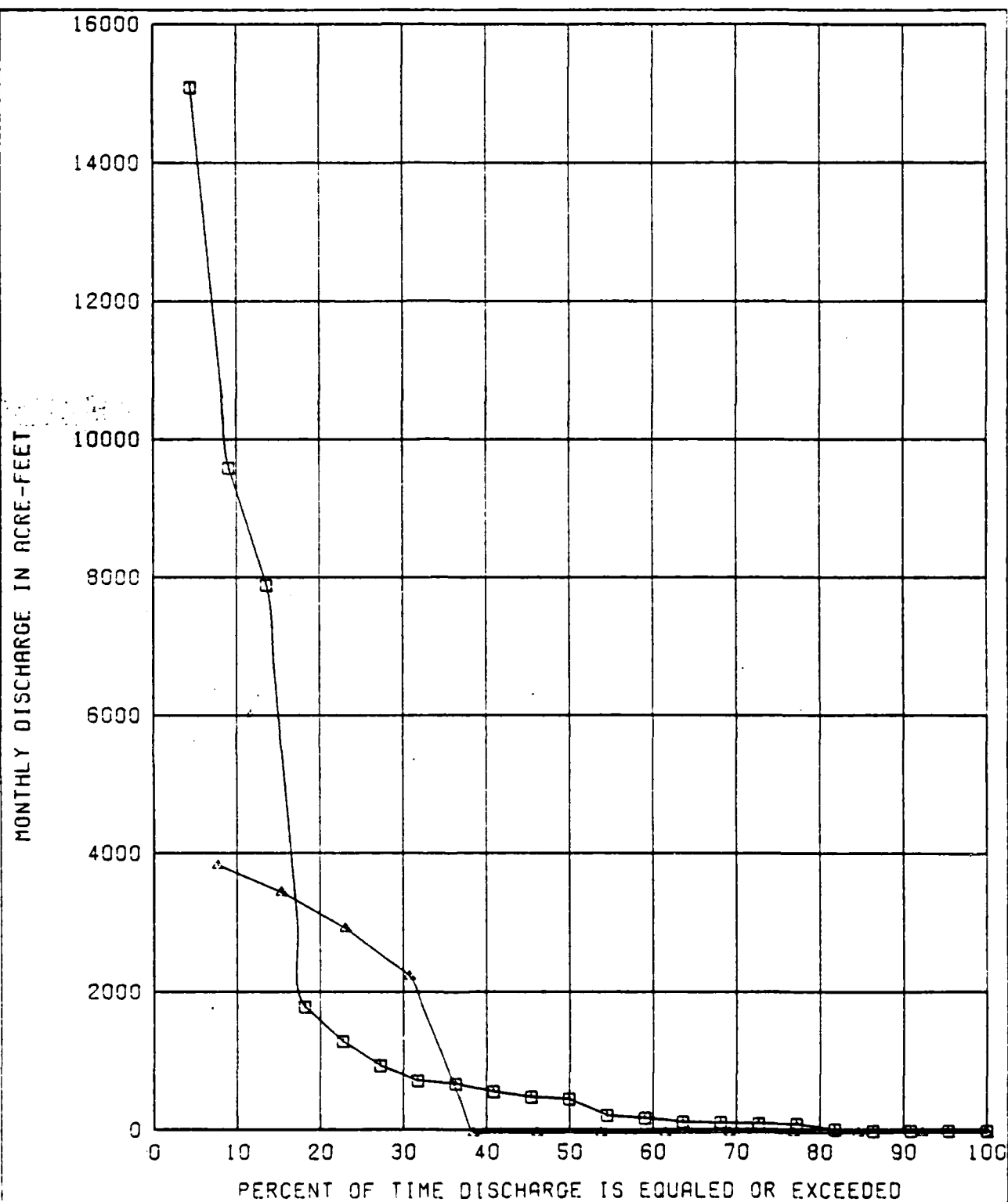
BARDWELL LAKE

FLOW DURATION CURVES AT DAM SITE

JUNE FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 18



LEGEND

□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1939-1959)

△ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1955-1975)

TRINITY RIVER BASIN, TEXAS

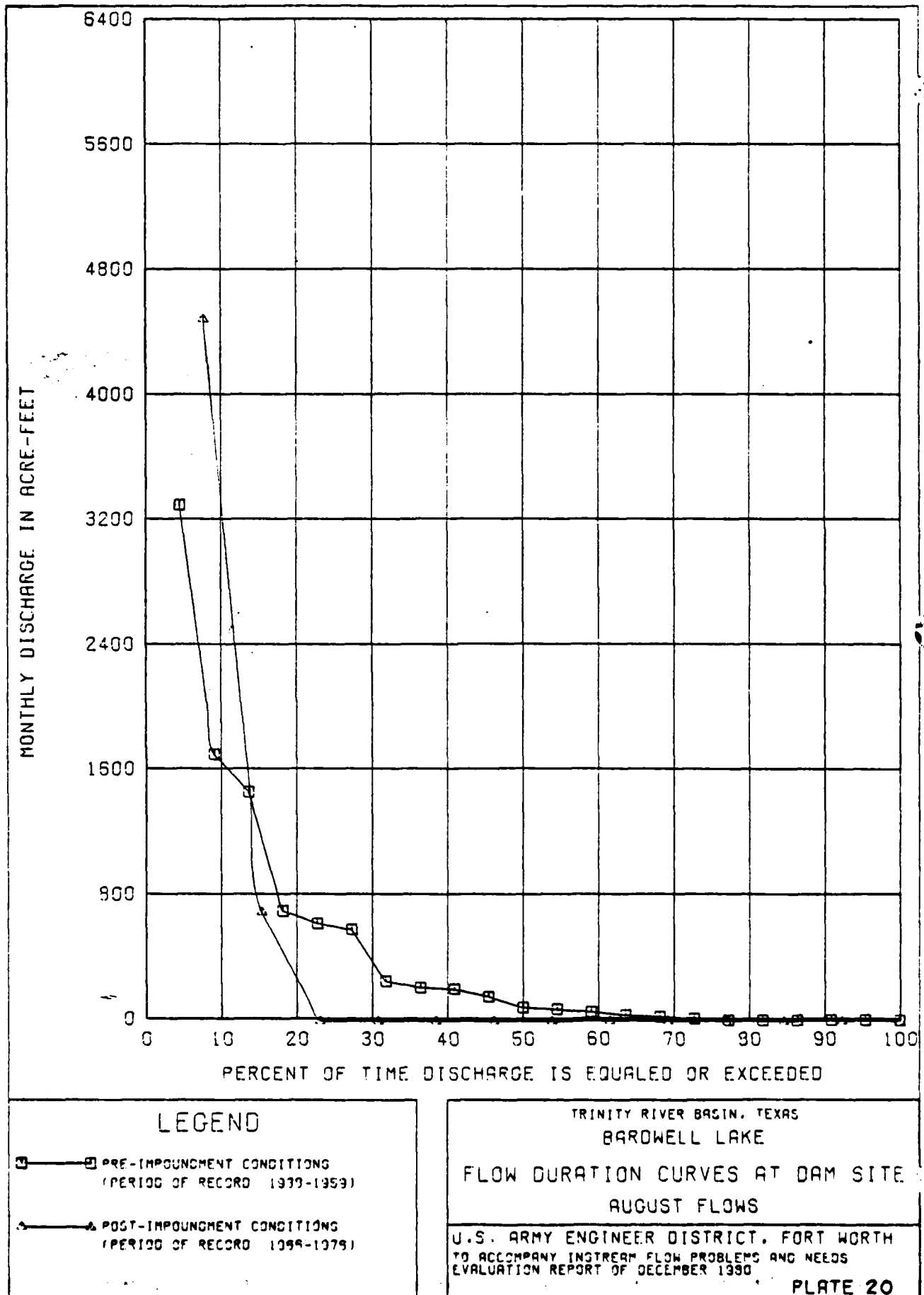
BARDWELL LAKE

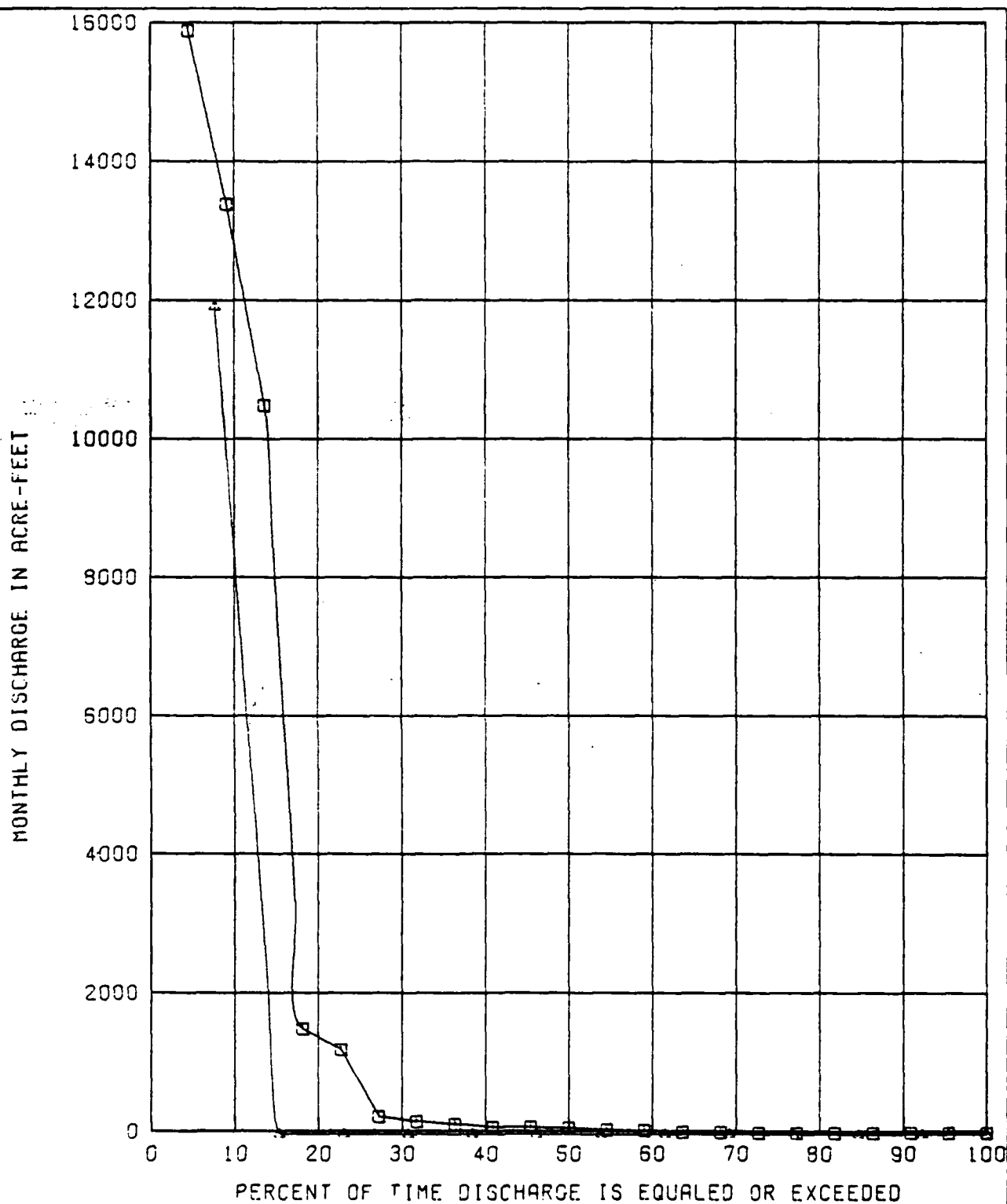
FLOW DURATION CURVES AT DAM SITE

JULY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 19





LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1933-1959)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1955-1975)

TRINITY RIVER BASIN, TEXAS

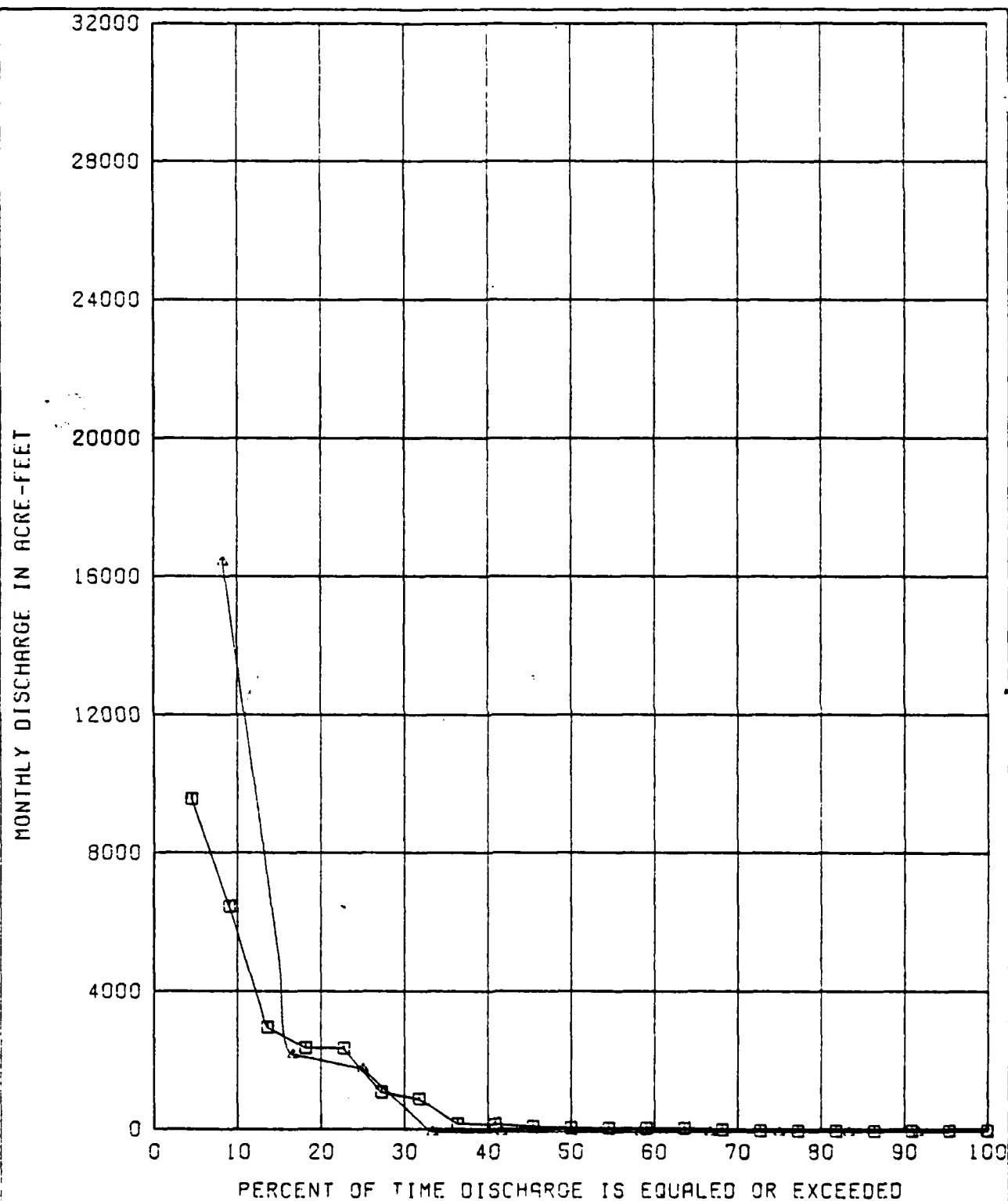
BARDWELL LAKE

FLOW DURATION CURVES AT DAM SITE

SEPTEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 21



LEGEND

- PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1939-1959)
- ▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1966-1979)

TRINITY RIVER BASIN, TEXAS

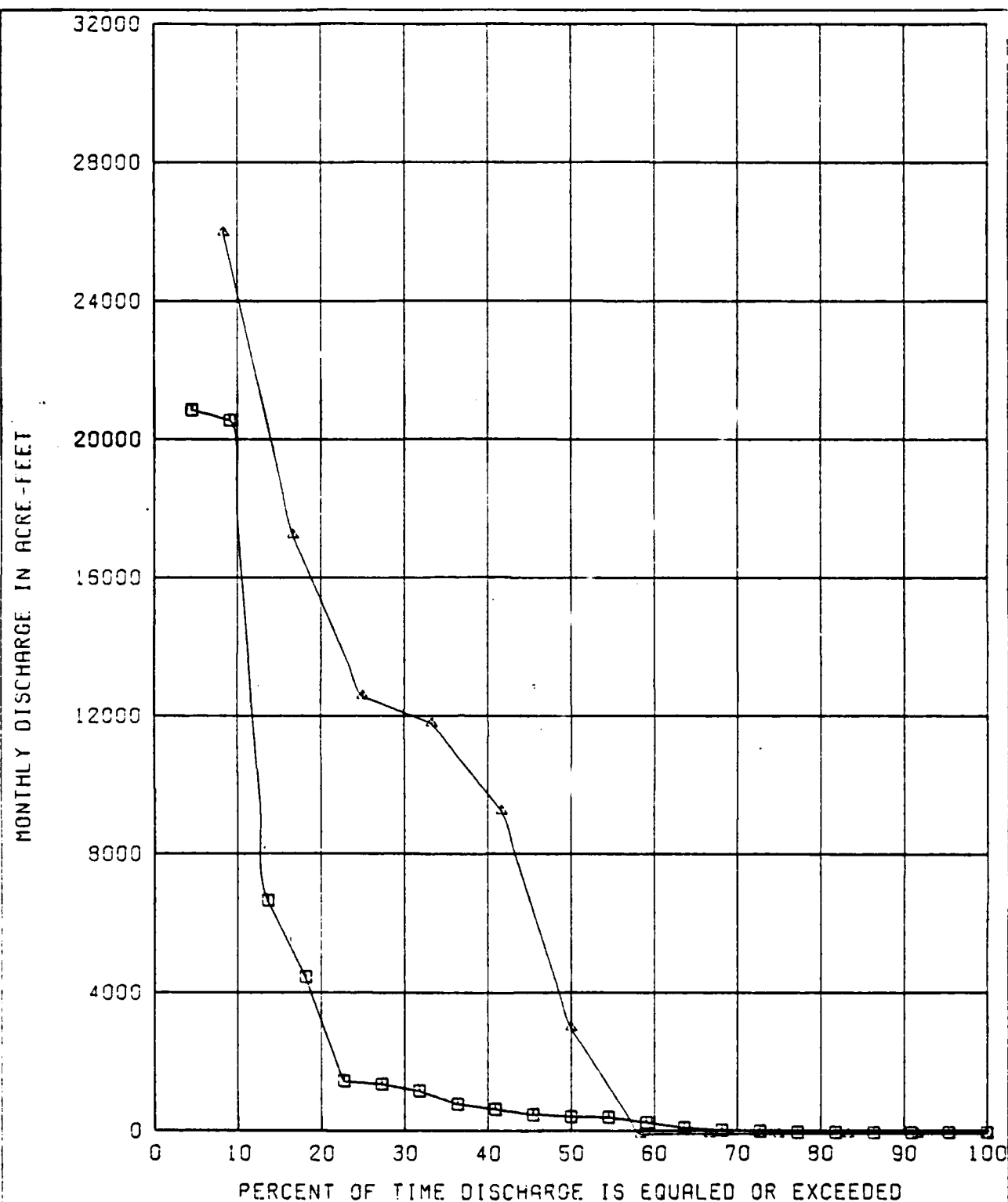
BARDWELL LAKE

FLOW DURATION CURVES AT DAM SITE

OCTOBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 22



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1937-1959)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1965-1976)

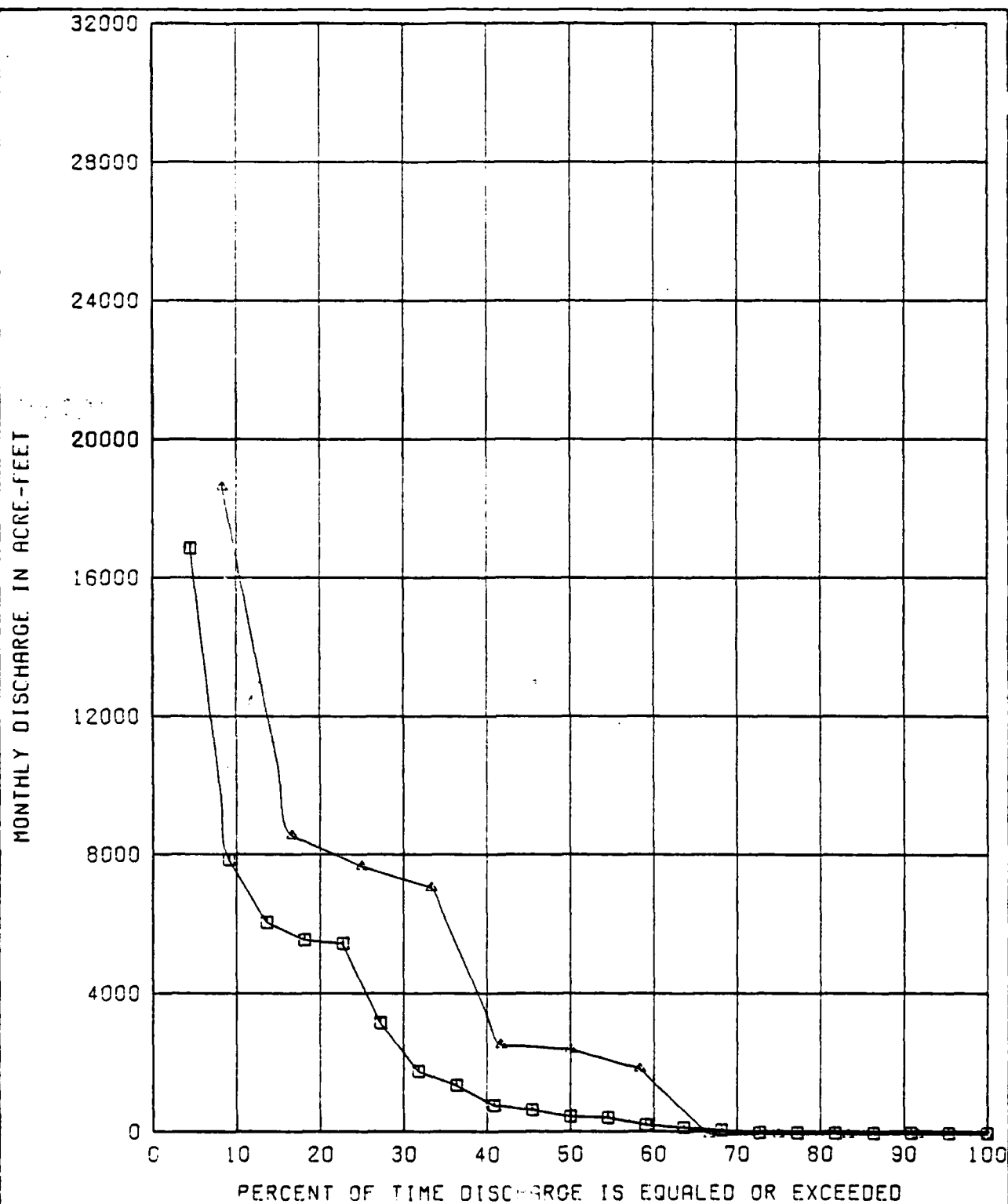
TRINITY RIVER BASIN, TEXAS

BARDWELL LAKE

FLOW DURATION CURVES AT DAM SITE
NOVEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 23



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1939-1953)

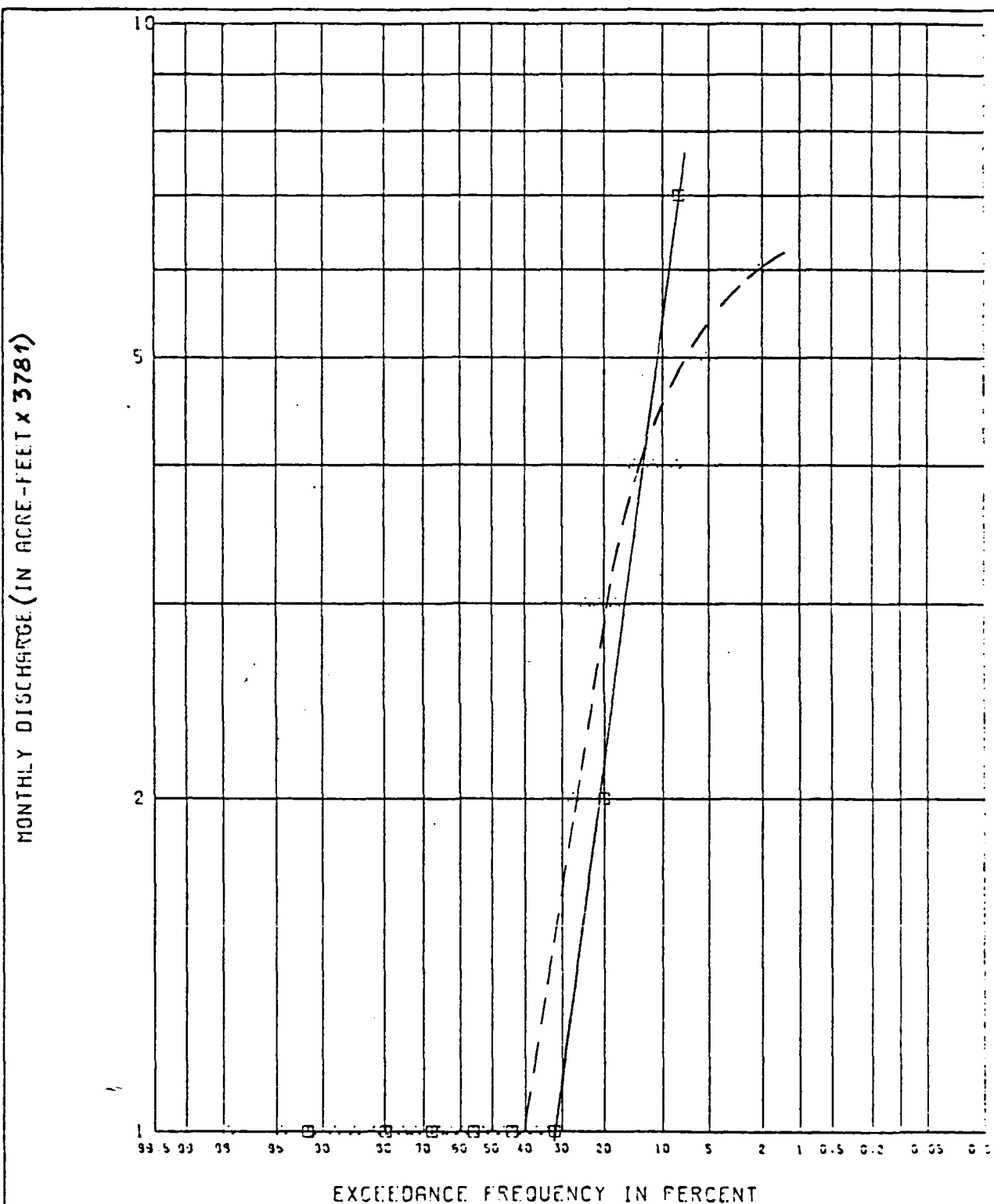
▲ — ▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1955-1979)

TRINITY RIVER BASIN, TEXAS
BARDWELL LAKE

FLOW DURATION CURVES AT DAM SITE
DECEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 24



LEGEND

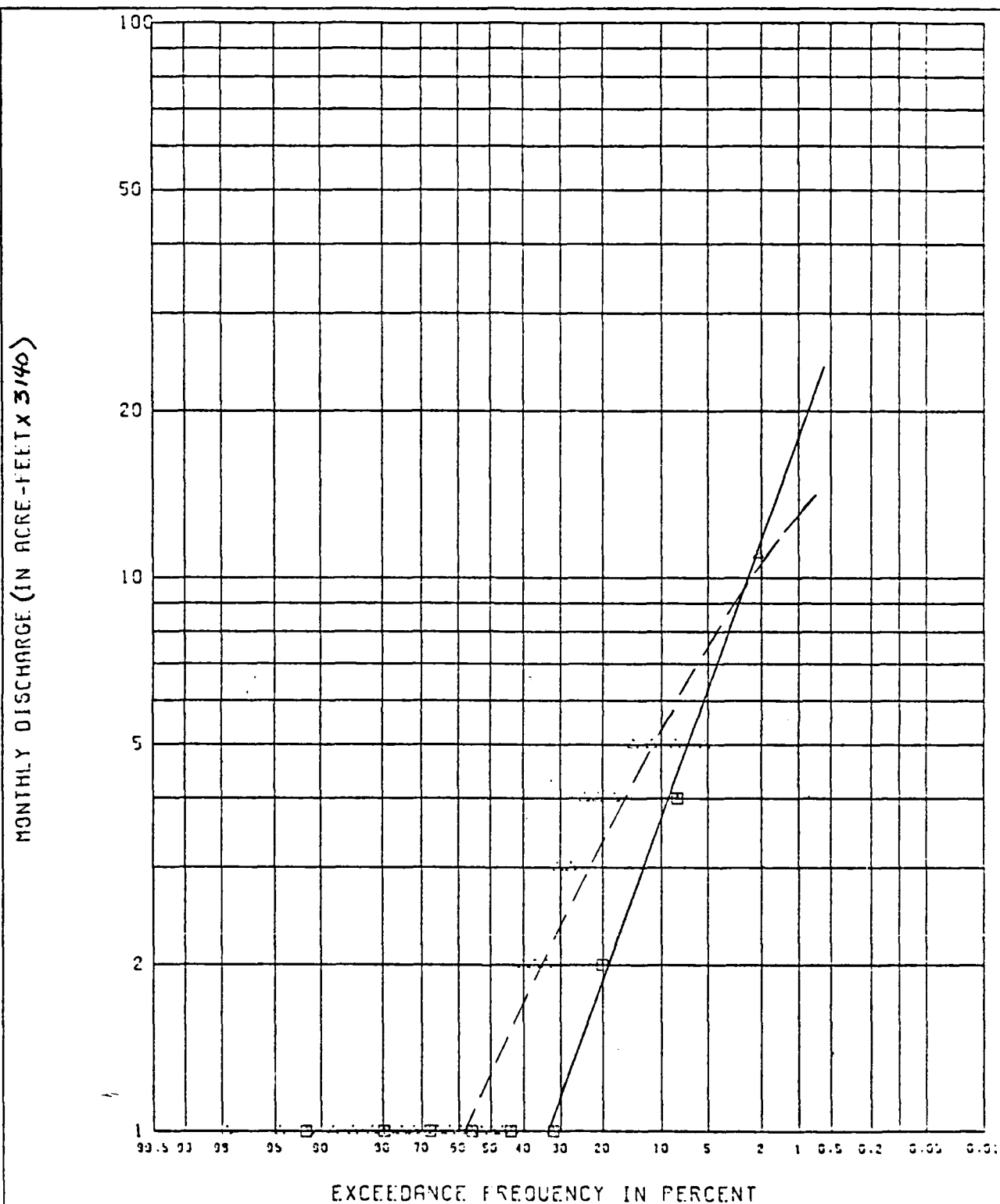
—■— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1937-1944)

- - - POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1945-1975)

BUFFALO BAYOU
BARKER RESERVOIR
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
JANUARY FLOWS

GALVESTON DISTRICT
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 1



LEGEND

—■— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1937-1944)

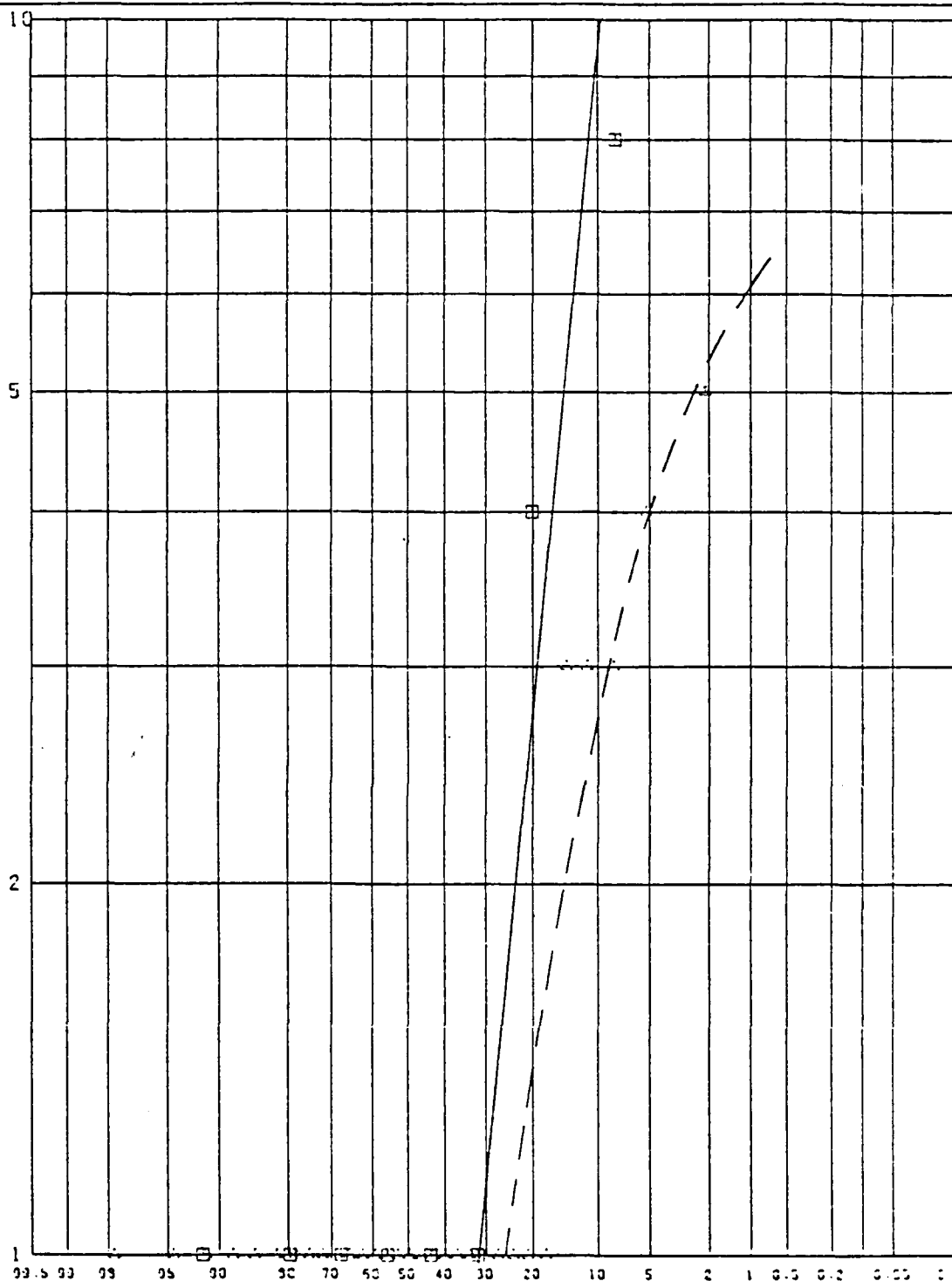
- - - POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1945-1975)

BUFFALO BAYOU
BARKER RESERVOIR
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
FEBRUARY FLOWS

GALVESTON DISTRICT
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 2

MONTHLY DISCHARGE (IN ACRE-FEET X 3784)



EXCEEDANCE FREQUENCY IN PERCENT

LEGEND

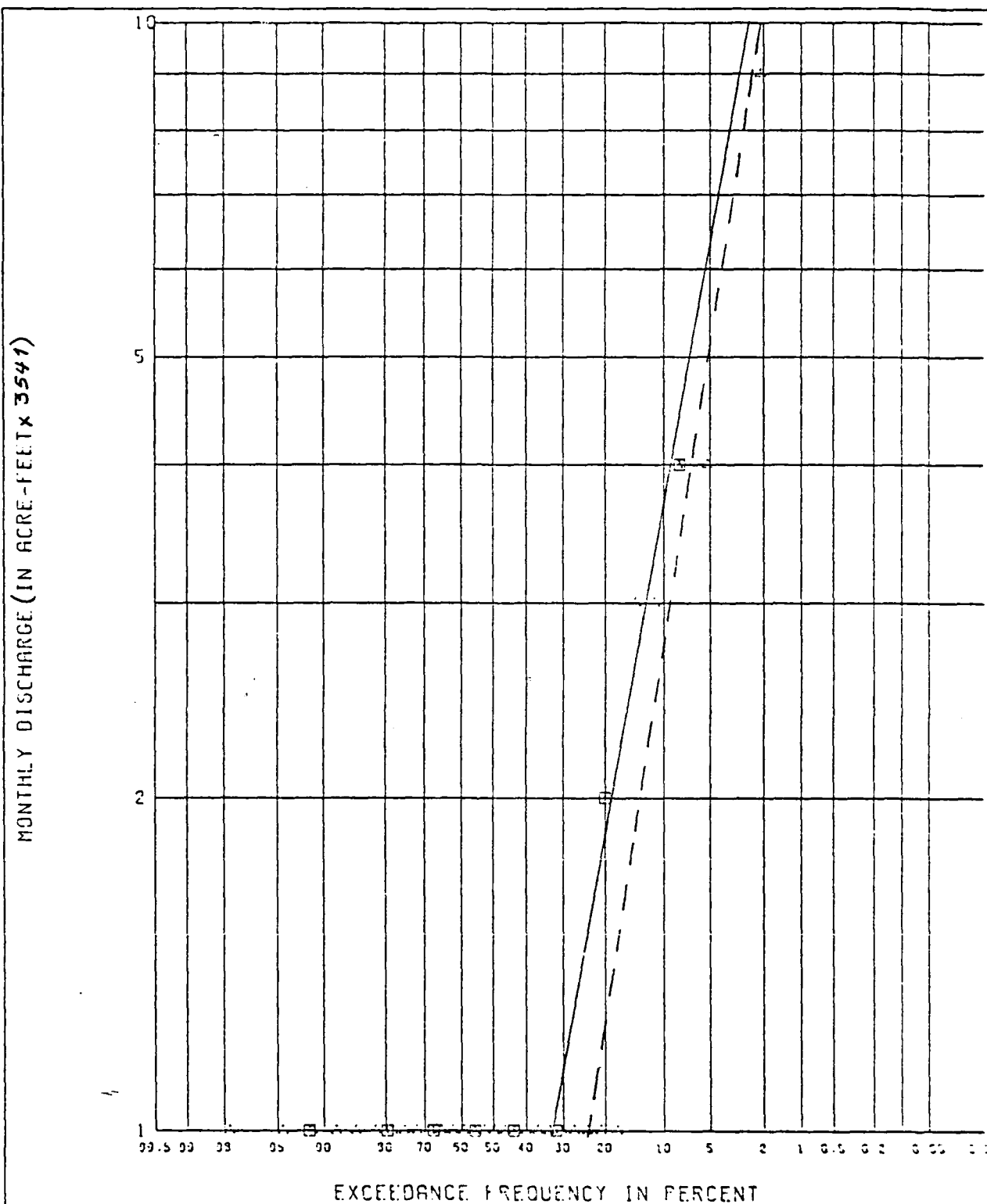
—□— PRE-IMPONDMENT CONDITIONS
(PERIOD OF RECORD 1937-1944)

-△- POST-IMPONDMENT CONDITIONS
(PERIOD OF RECORD 1945-1975)

BUFFALO BAYOU
BARKER RESERVOIR
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
MARCH FLOWS

GALVESTON DISTRICT
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 2



LEGEND

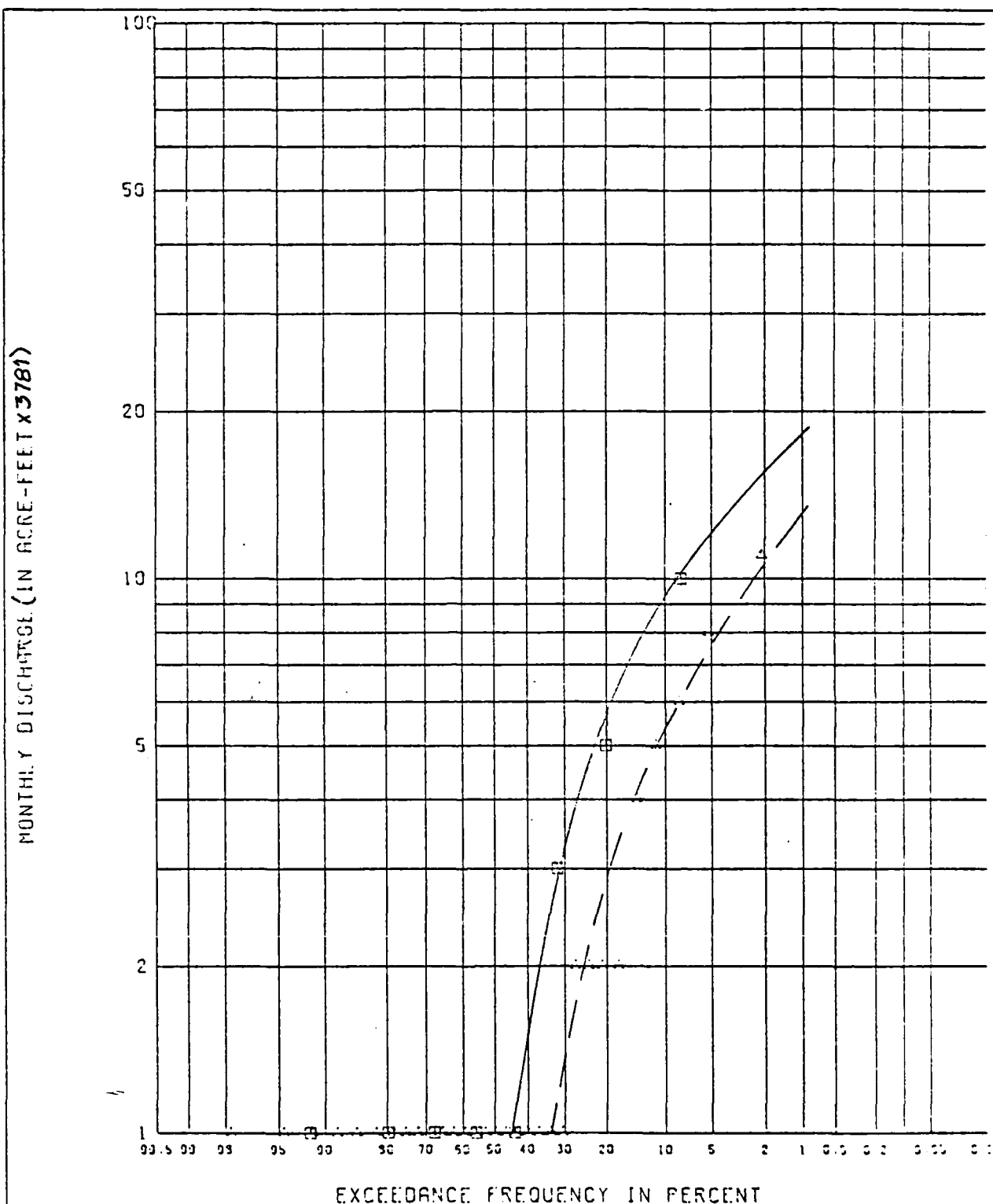
—■— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1937-1944)

- - - POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1945-1975)

BUFFALO BAYOU
BARKER RESERVOIR
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
APRIL FLOWS

GALVESTON DISTRICT
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 4



LEGEND

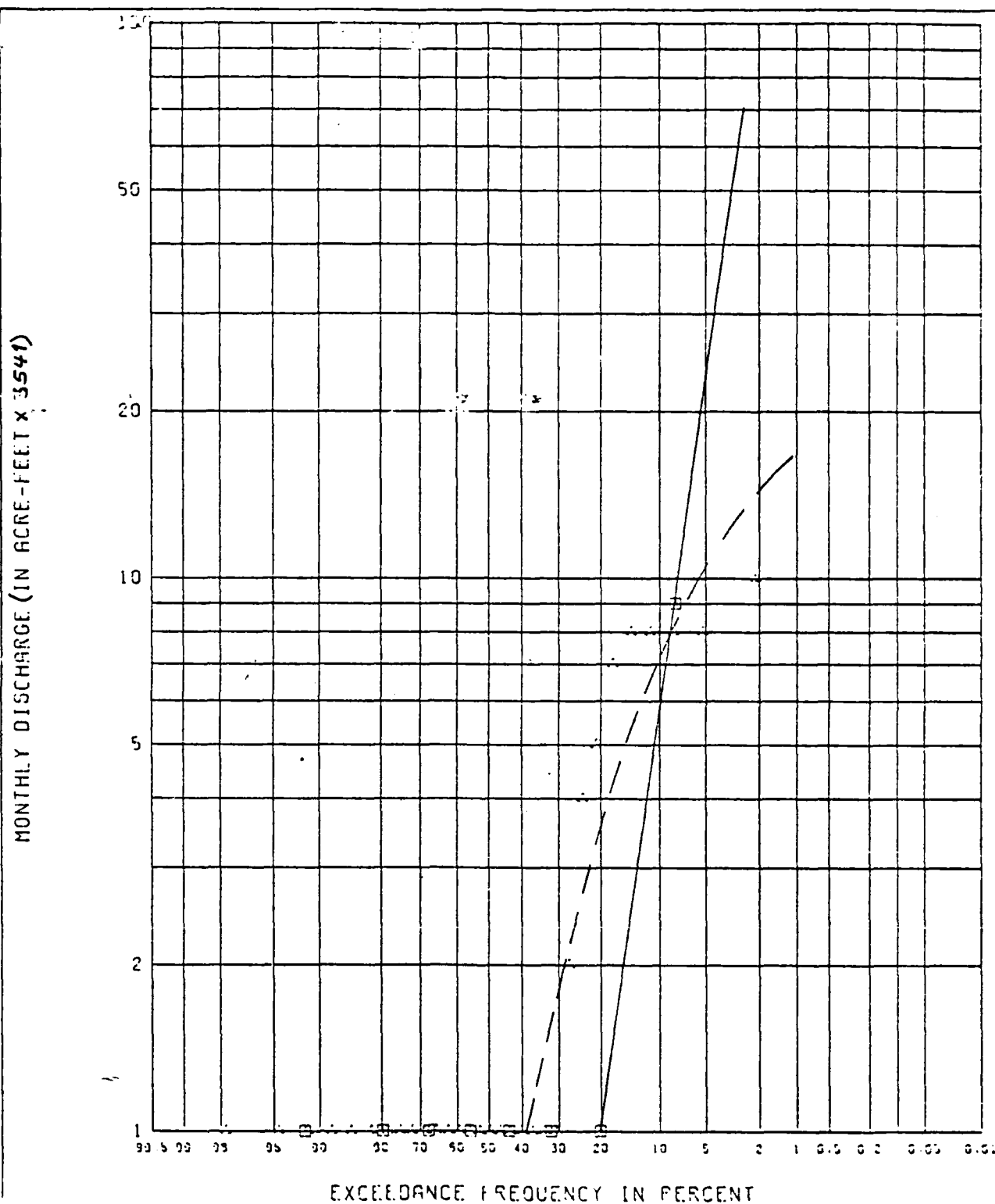
— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1937-1941)

- - - POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1945-1975)

BUFFALO BAYOU
BARKER RESERVOIR
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
MAY FLOWS

GALVESTON DISTRICT
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 5



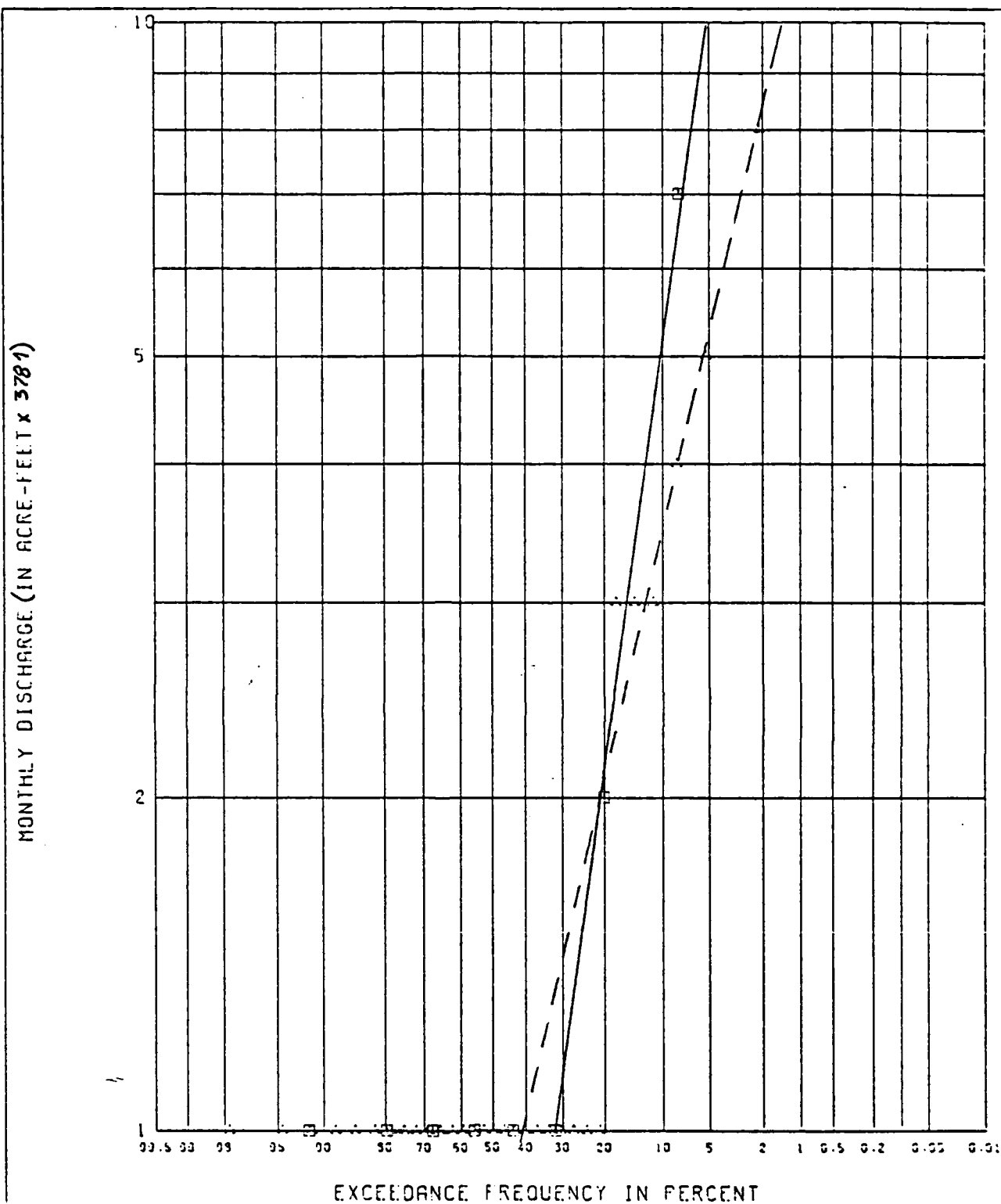
LEGEND

- PRE-IMPONDMENT CONDITIONS
(PERIOD OF RECORD 1937-1944)
- - - - POST-IMPONDMENT CONDITIONS
(PERIOD OF RECORD 1945-1975)

BUFFALO BAYOU
BARKER RESERVOIR
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
JUNE FLOWS

SALVESTON DISTRICT
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 4



LEGEND

—■— PRE-IMPONDMENT CONDITIONS
(PERIOD OF RECORD 1937-1944)

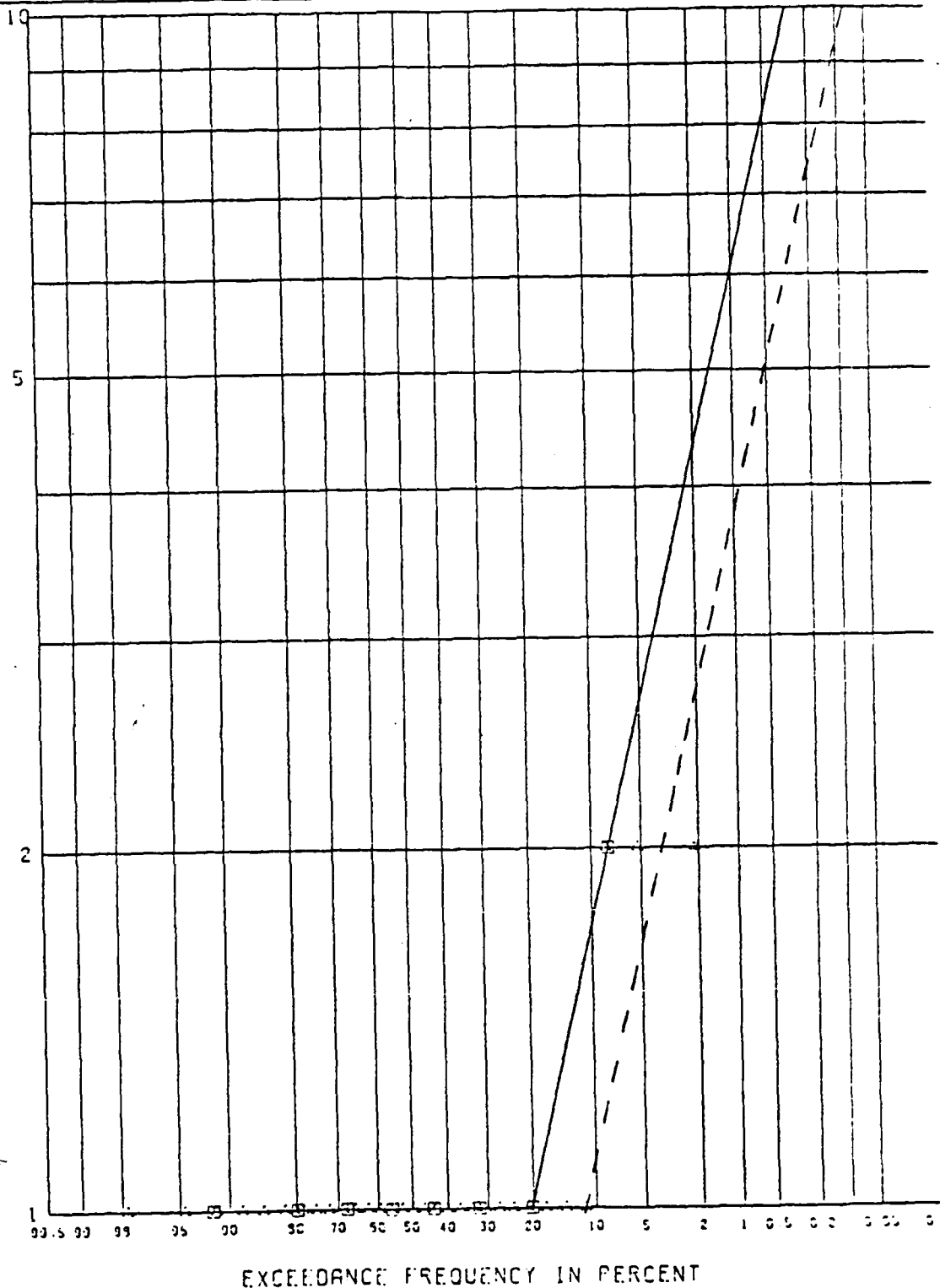
- - -■- POST-IMPONDMENT CONDITIONS
(PERIOD OF RECORD 1945-1975)

BUFFALO BOYD
BARKER RESERVOIR
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
JULY FLOWS

GALVESTON DISTRICT
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 7

MONTHLY DISCHARGE (IN ACRE-FEET X 3784)

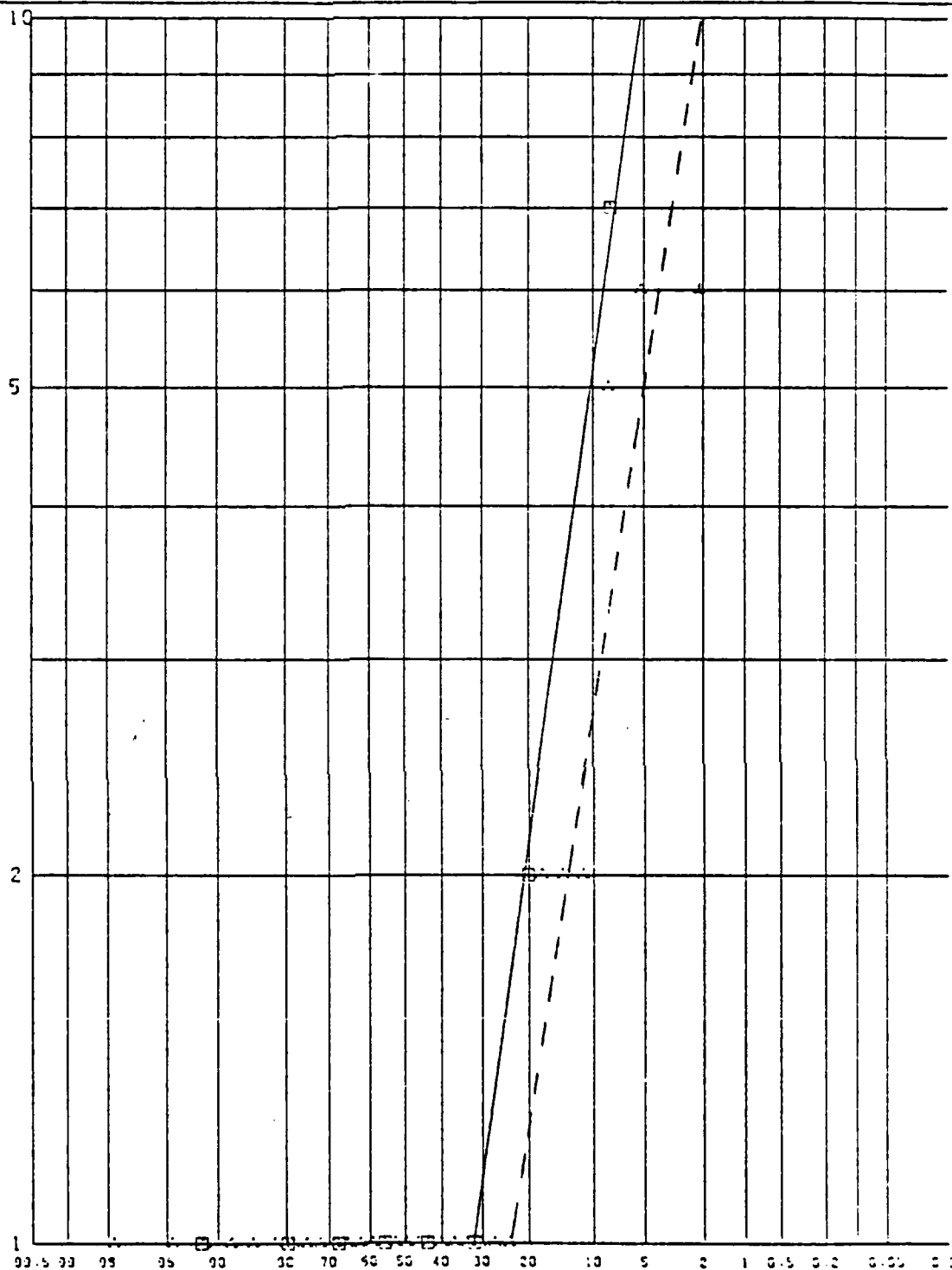


LEGEND

— PRE-IMPONDMENT CONDITIONS
(PERIOD OF RECORD 1937-1944)- - - POST-IMPONDMENT CONDITIONS
(PERIOD OF RECORD 1945-1975)BUFFALO BAYOU
BARKER RESERVOIR
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
AUGUST FLOWSGALVESTON DISTRICT
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 2

MONTHLY DISCHARGE (IN ACRE-Feet x 3541)



EXCEEDANCE FREQUENCY IN PERCENT

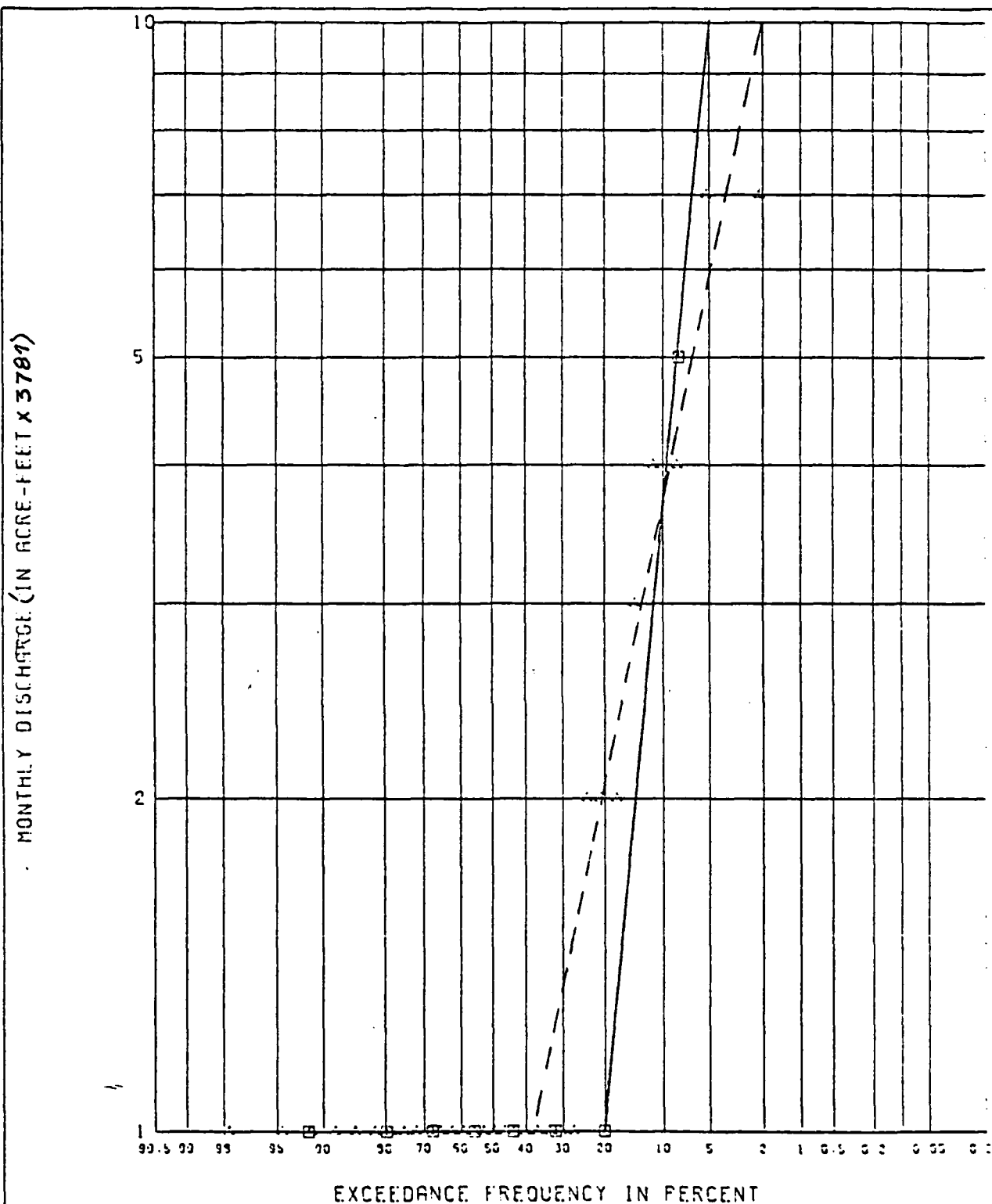
LEGEND

— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1937-1941)

- - - POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1945-1975)

BUFFALO BAYOU
BARKER RESERVOIR
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
SEPTEMBER FLOWS

GALVESTON DISTRICT
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990



LEGEND

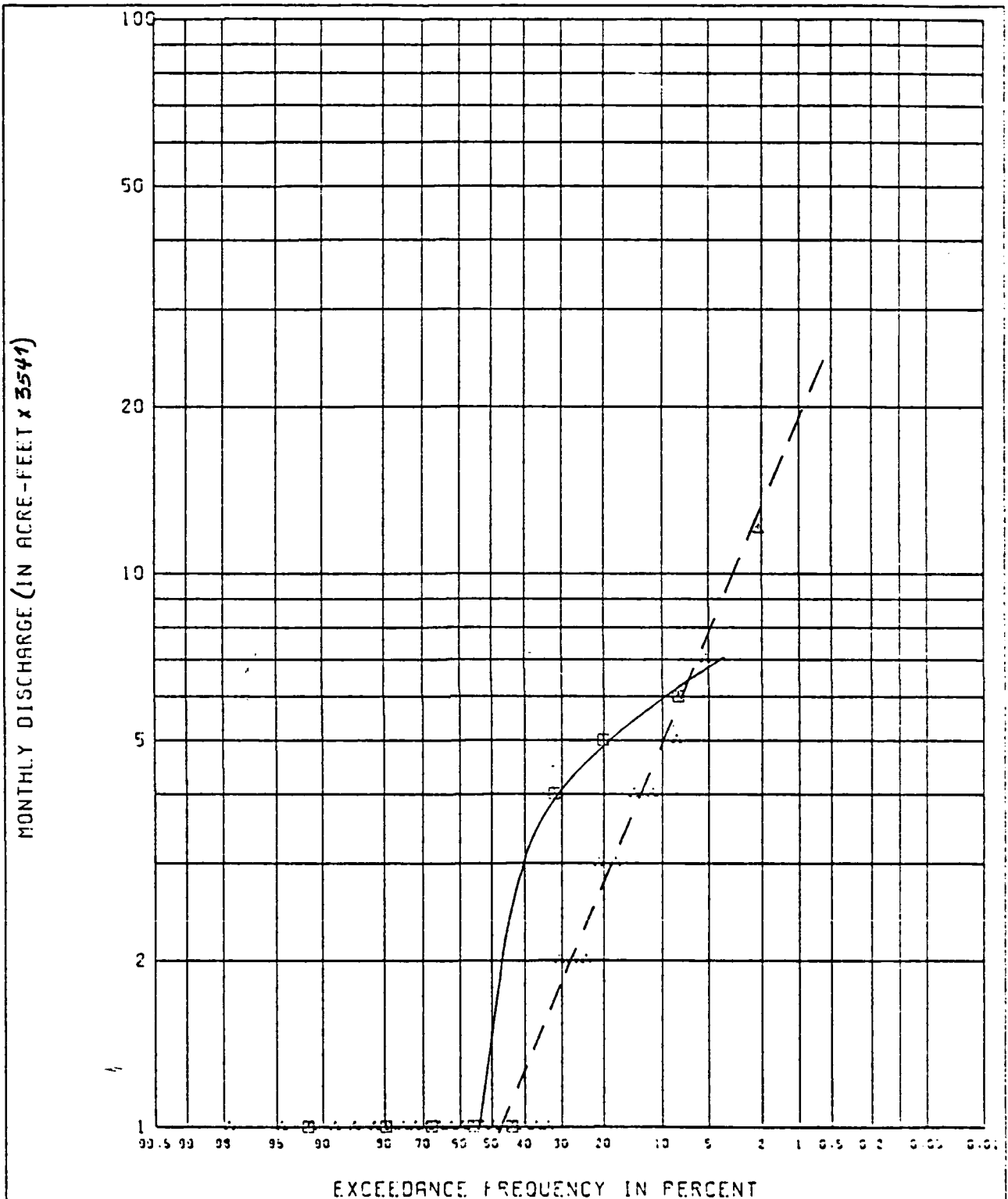
—■— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1937-1941)

-▲- POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1949-1975)

BUFFALO BAYOU
BARKER RESERVOIR
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
OCTOBER FLOWS

GALVESTON DISTRICT
TO ADDRESS INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 10



LEGEND

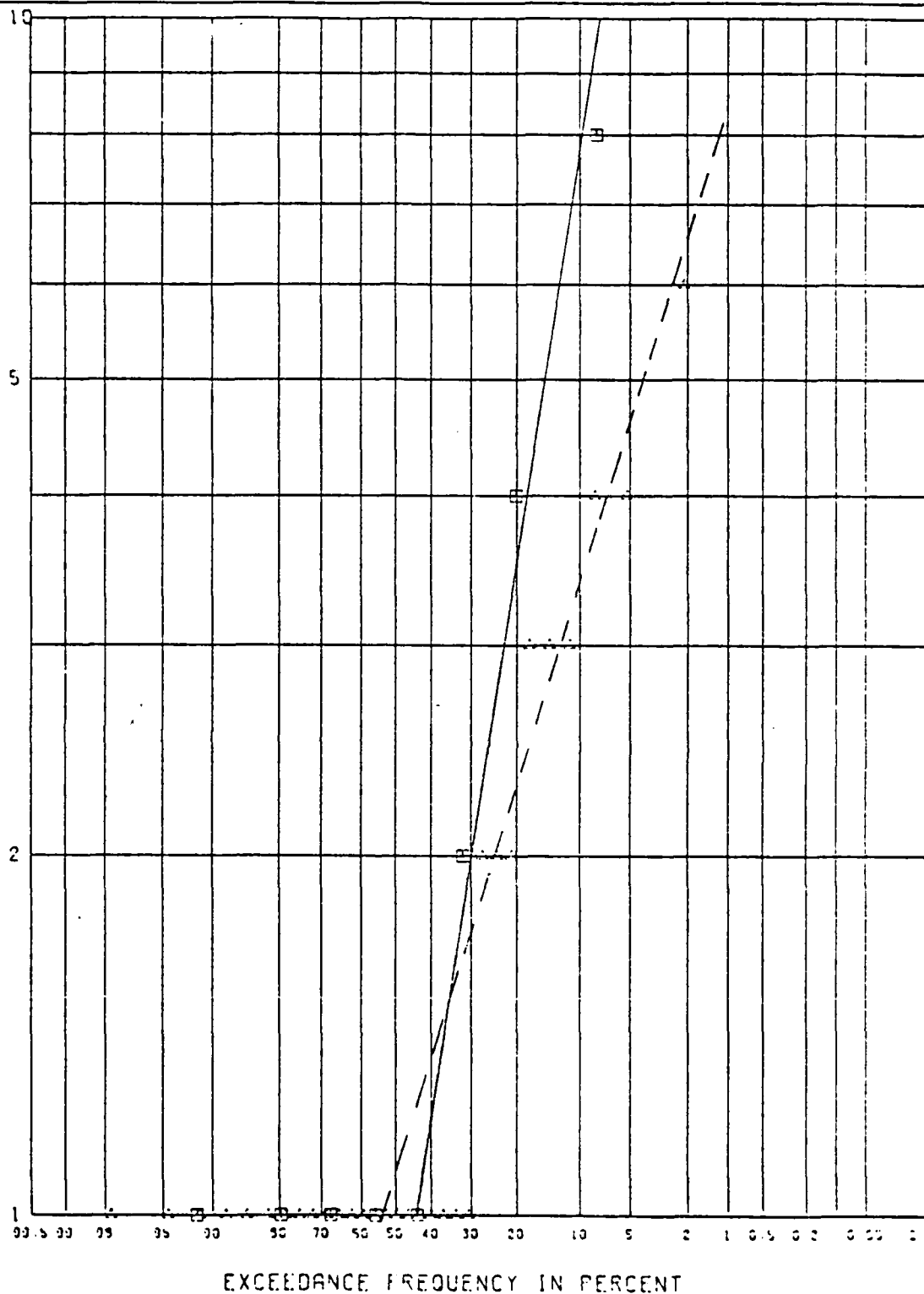
—■— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1937-1941)

-▲- POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1945-1975)

BUFFALO BRIDGE
BARKER RESERVOIR
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
NOVEMBER FLOWS

GALVESTON DISTRICT
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

MONTHLY DISCHARGE (IN ACRE-FEET X 3781)



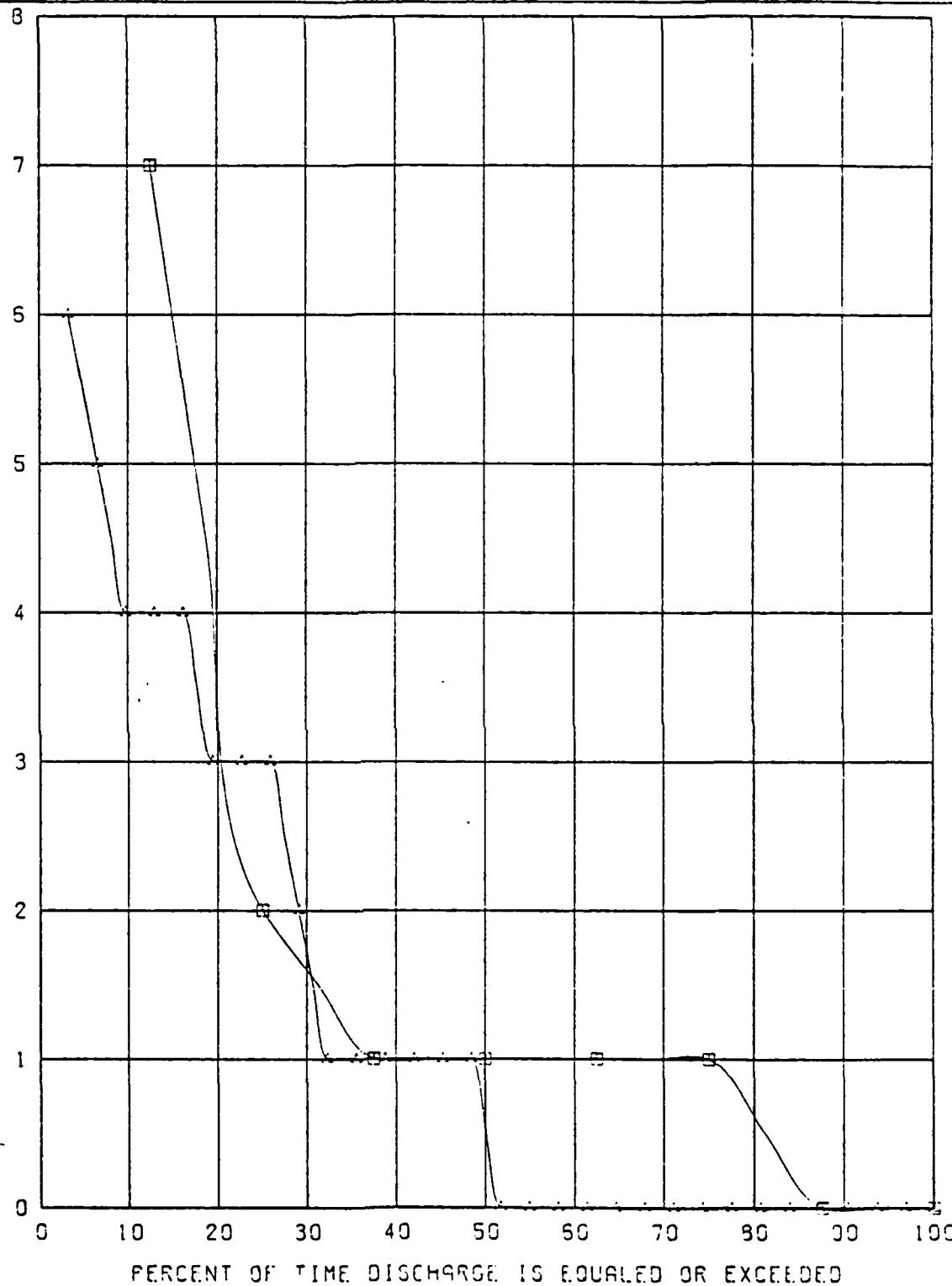
LEGEND

- □ — PRE-IMPONDMENT CONDITIONS
 (PERIOD OF RECORD 1937-1941)
- - Δ - - POST-IMPONDMENT CONDITIONS
 (PERIOD OF RECORD 1945-1975)

BUFFALO BRANCH
 BARKER RESERVOIR
 DISCHARGE-FREQUENCY RELATIONS
 AT DAM SITE
 DECEMBER FLOWS

GALVESTON DISTRICT
 TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
 EVALUATION REPORT OF DECEMBER 1990

MONTHLY DISCHARGE (IN ACRE-FEET X 3781)



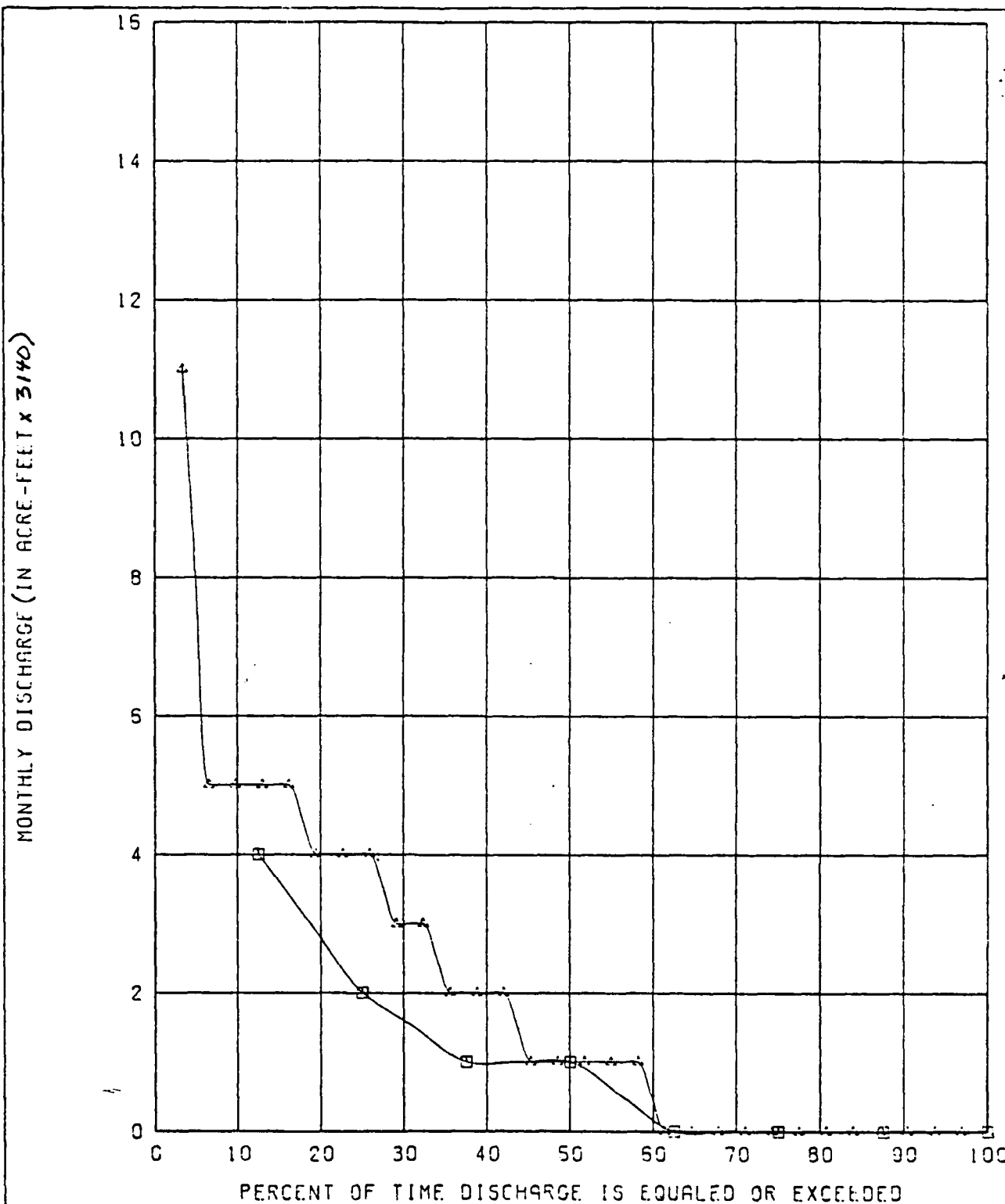
LEGEND

- PRE-IMPOUNDMENT CONDITIONS
 (PERIOD OF RECORD 1937-1941)
- POST-IMPOUNDMENT CONDITIONS
 (PERIOD OF RECORD 1946-1975)

BUFFALO BRIDGE
 BARKER RESERVOIR

FLOW DURATION CURVES AT DAM SITE
 JANUARY FLOWS

SALVESTON DISTRICT
 TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
 EVALUATION REPORT OF DECEMBER 1980



LEGEND

- PRE-IMPOUNDMENT CONDITIONS
 (PERIOD OF RECORD 1937-1944)
- + POST-IMPOUNDMENT CONDITIONS
 (PERIOD OF RECORD 1946-1975)

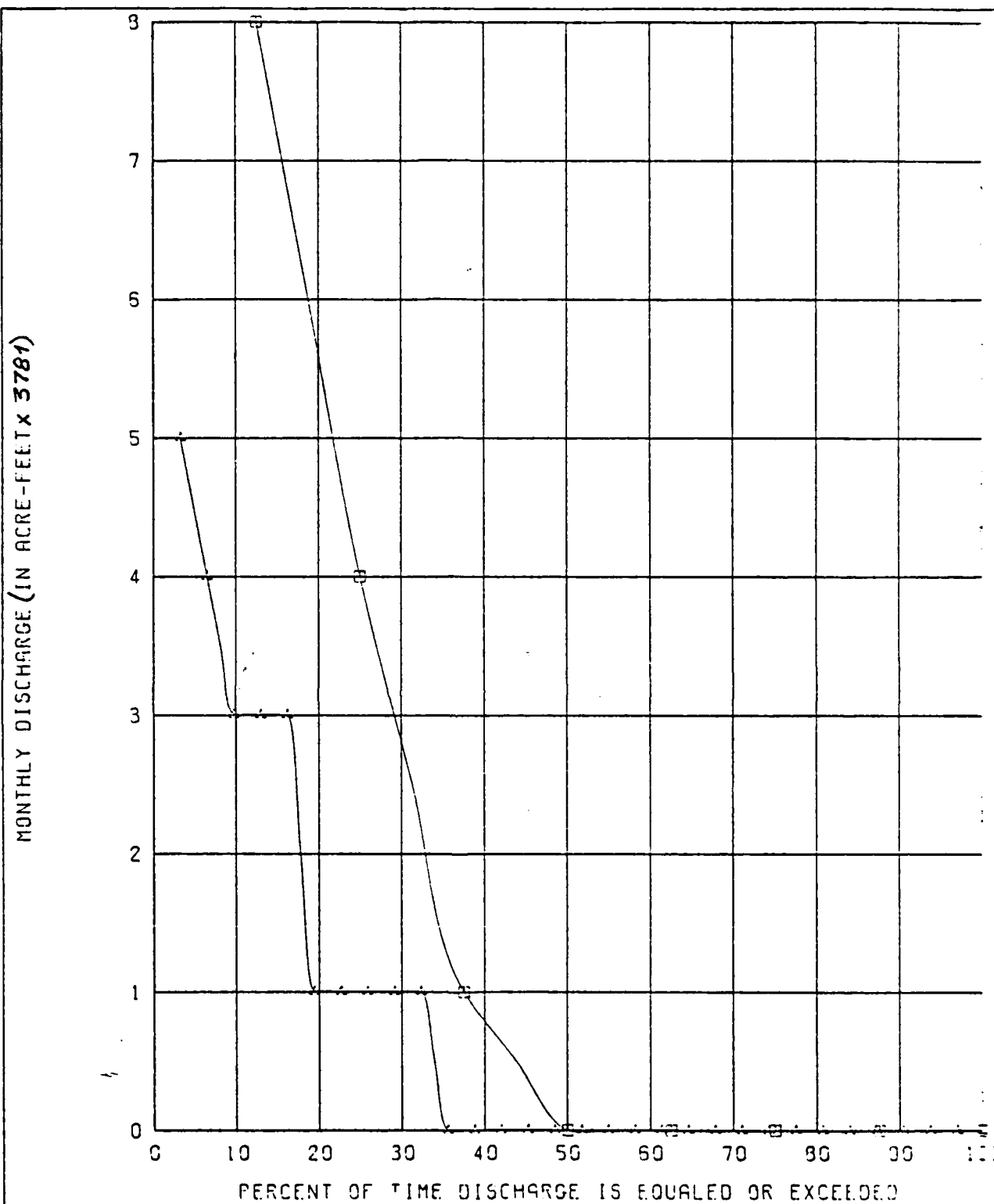
BUFFALO BAYOU

BARKER RESERVOIR

FLOW DURATION CURVES AT DAM SITE
FEBRUARY FLOWS

GALVESTON DISTRICT
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 14



LEGEND

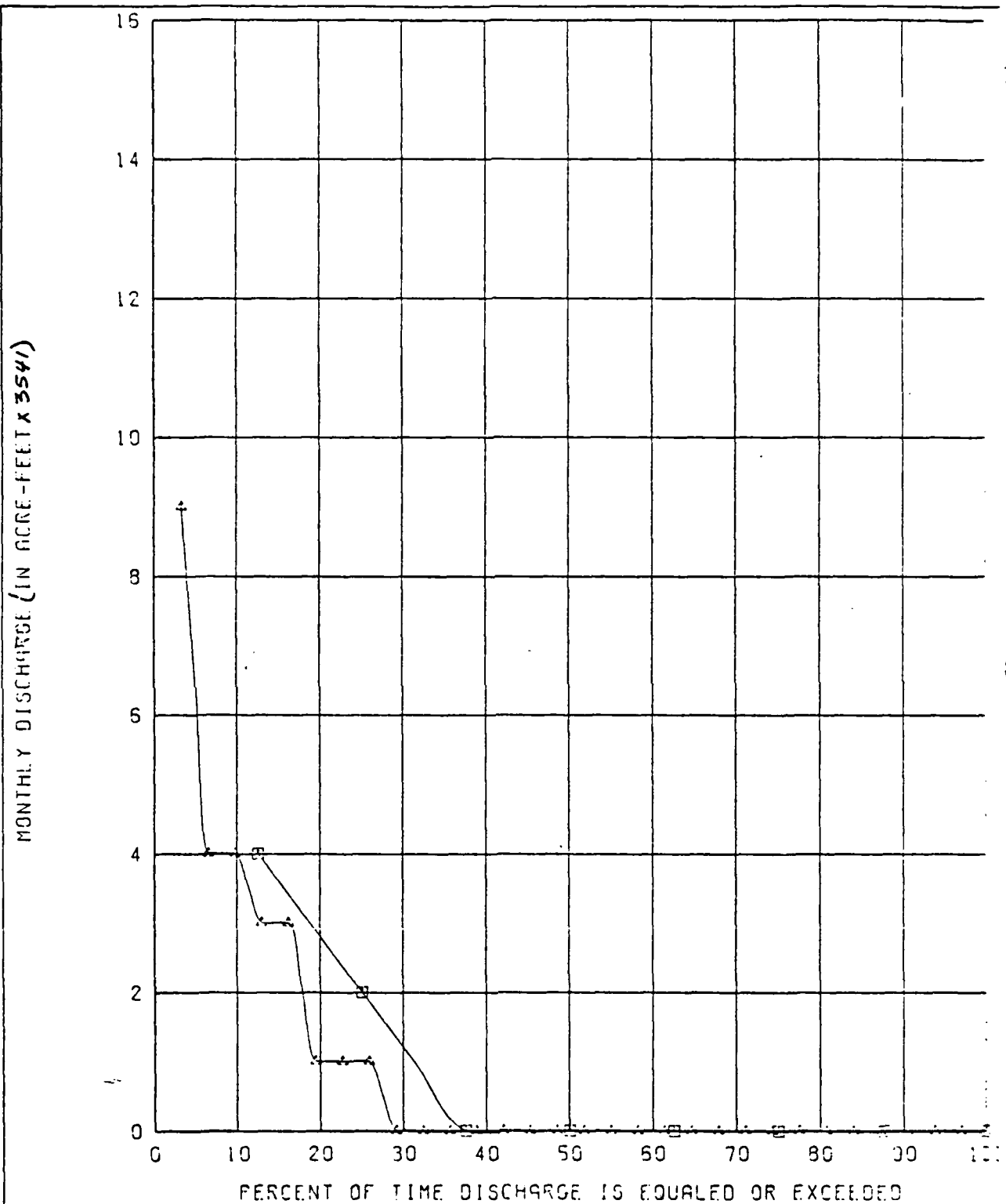
- — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1937-1944)
- △ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1945-1975)

BUFFALO BAYOU
BARKER RESERVOIR

FLOW DURATION CURVES AT DAM SITE
MARCH FLOWS

GALVESTON DISTRICT
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

SHEET 15



LEGEND

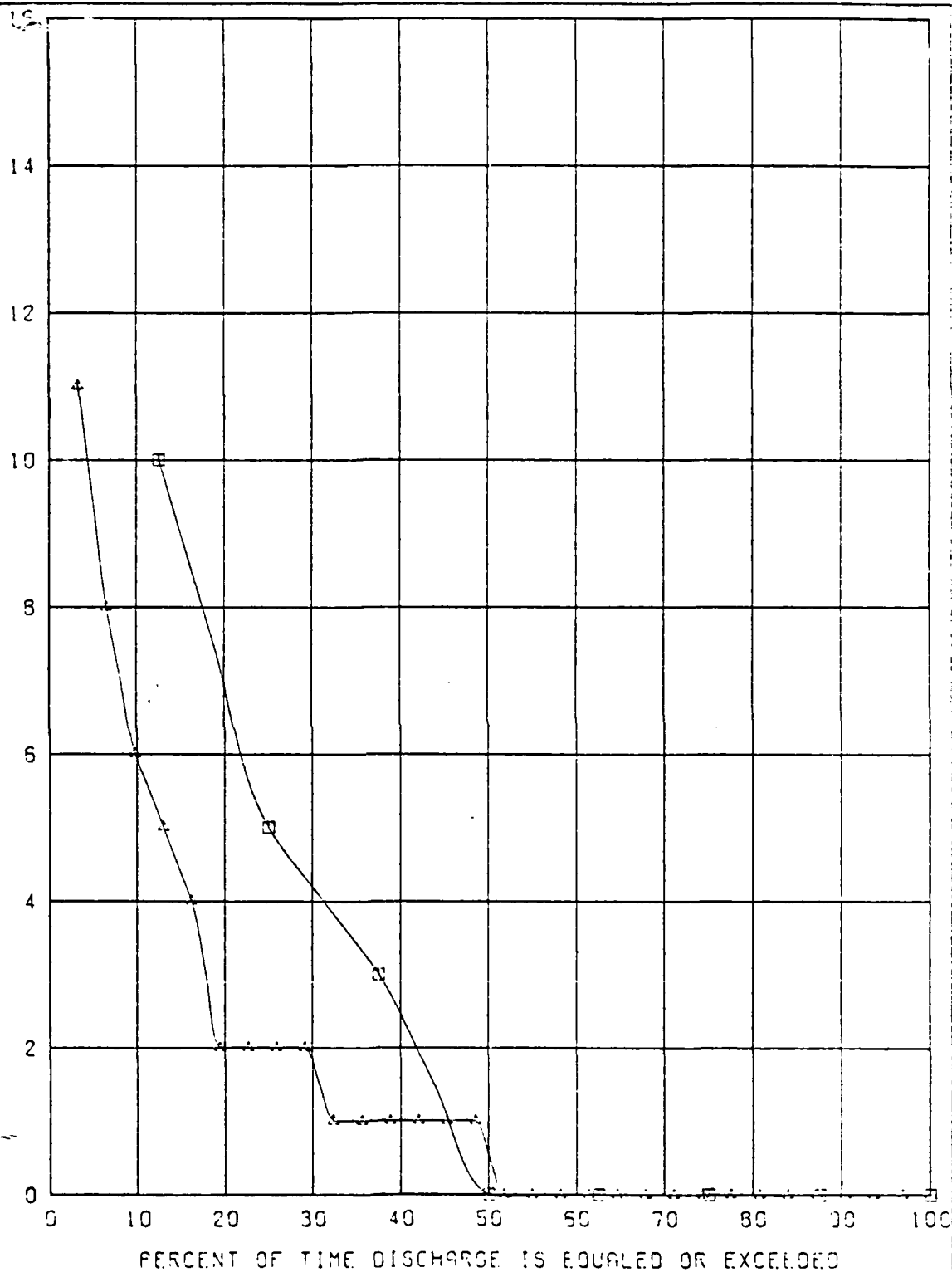
- — □ PRE-IMPONDMENT CONDITIONS
(PERIOD OF RECORD 1937-1944)
- • — POST-IMPONDMENT CONDITIONS
(PERIOD OF RECORD 1945-1975)

BUFFALO BRIDGE
BARKER RESERVOIR
FLOW DURATION CURVES AT DAM SITE
APRIL FLOWS

GALVESTON DISTRICT
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 46

MONTHLY DISCHARGE (IN ACRE-FEET X 3781)



LEGEND

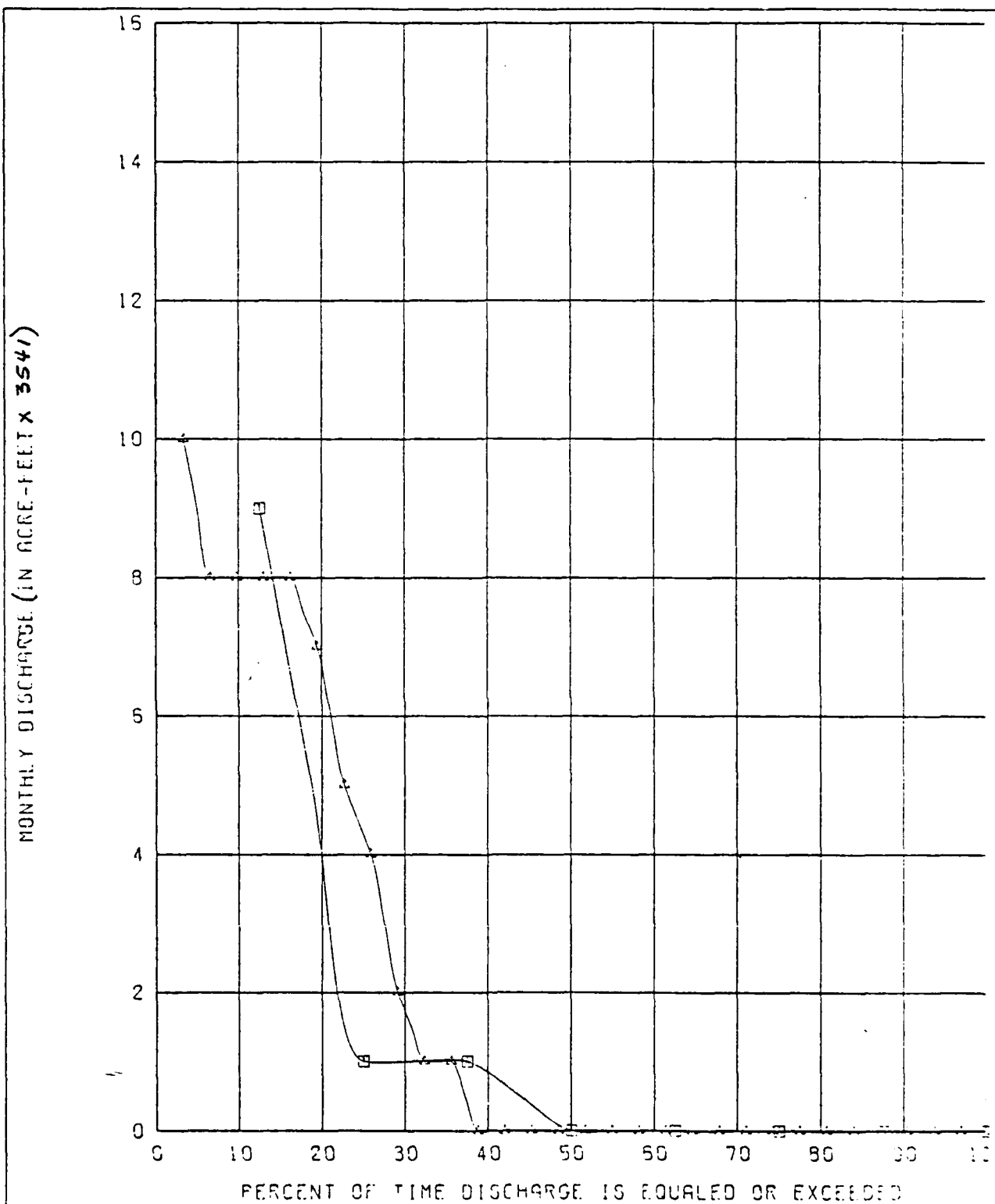
- PRE-IMPONDMENT CONDITIONS
 (PERIOD OF RECORD 1937-1941)
- POST-IMPONDMENT CONDITIONS
 (PERIOD OF RECORD 1945-1975)

BUFFALO BAYOU
BARKER RESERVOIR

FLOW DURATION CURVES AT DAM SITE
MAY FLOWS

GALVESTON DISTRICT
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 17



LEGEND

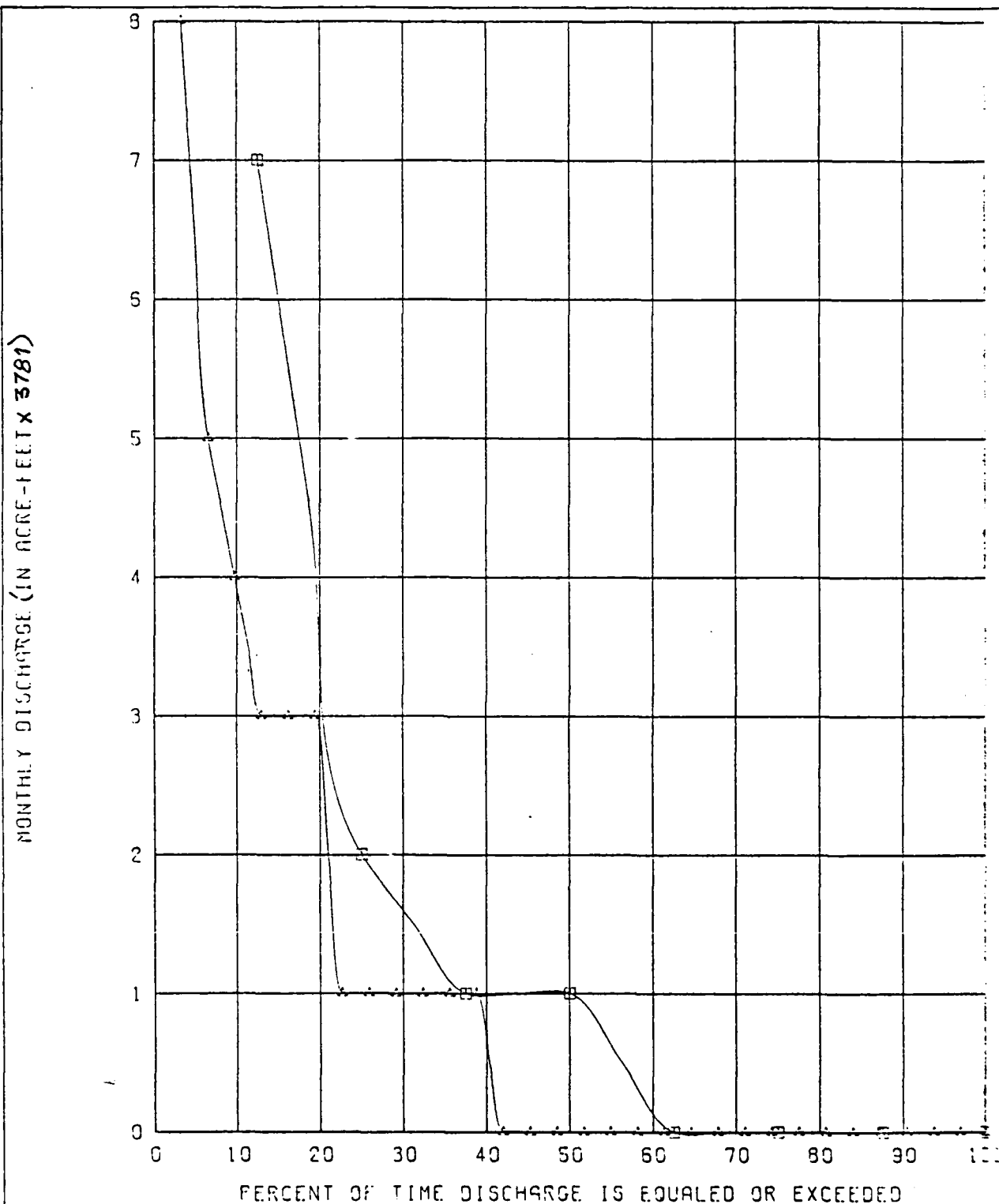
- — □ PRE-IMPOUNDMENT CONDITIONS
 (PERIOD OF RECORD 1937-1941)
- △ — △ POST-IMPOUNDMENT CONDITIONS
 (PERIOD OF RECORD 1945-1975)

BUFFALO BAYOU
BARKER RESERVOIR

FLOW DURATION CURVES AT DAM SITE
JUNE FLOWS

GALVESTON DISTRICT
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

SL-10-10



LEGEND

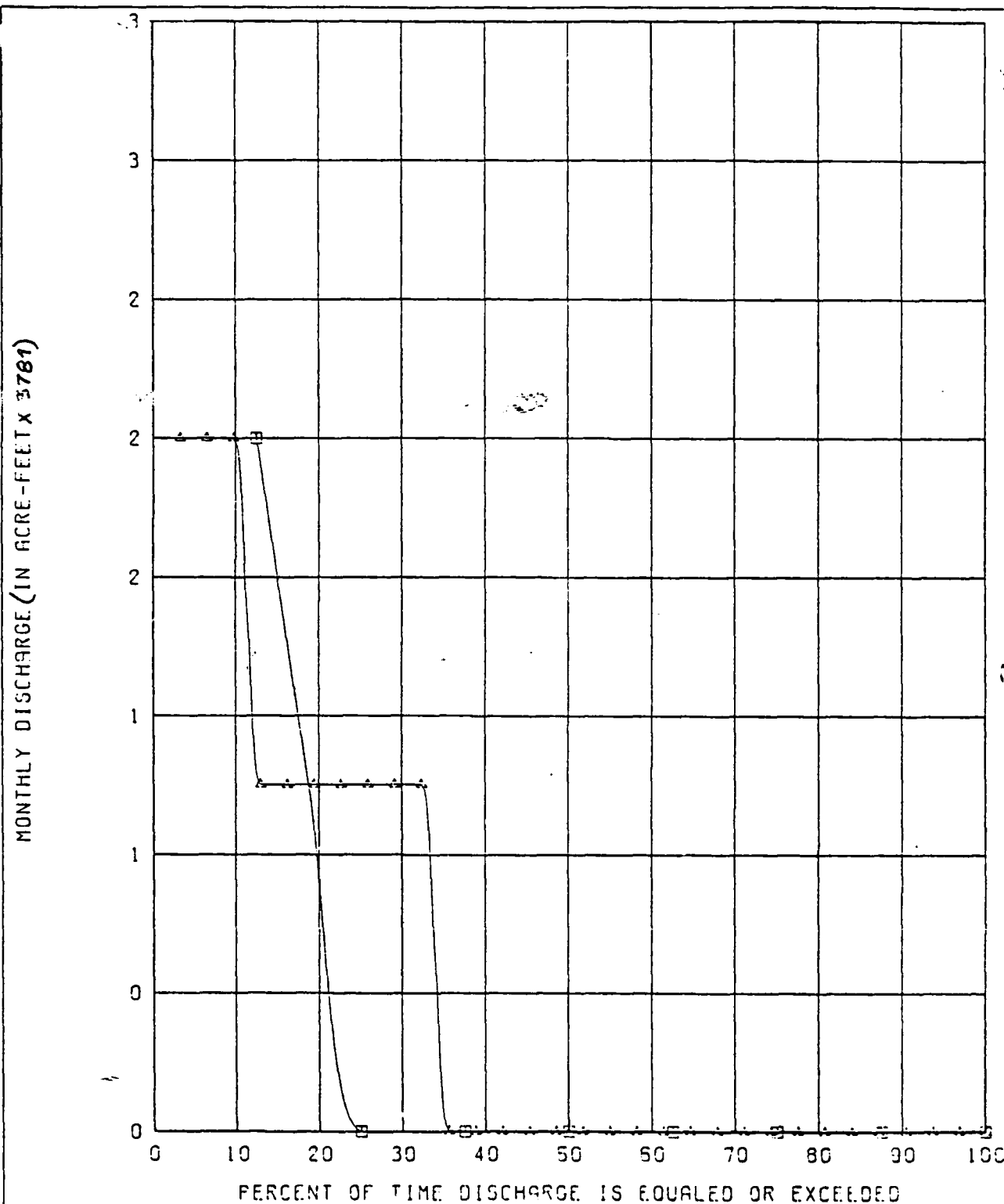
— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1937-1941)

— POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1946-1975)

BUFFALO BAYOU
BARKER RESERVOIR

FLOW DURATION CURVES AT DAM SITE
JULY FLOWS

GALVESTON DISTRICT
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990



LEGEND

—■— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1937-1944)

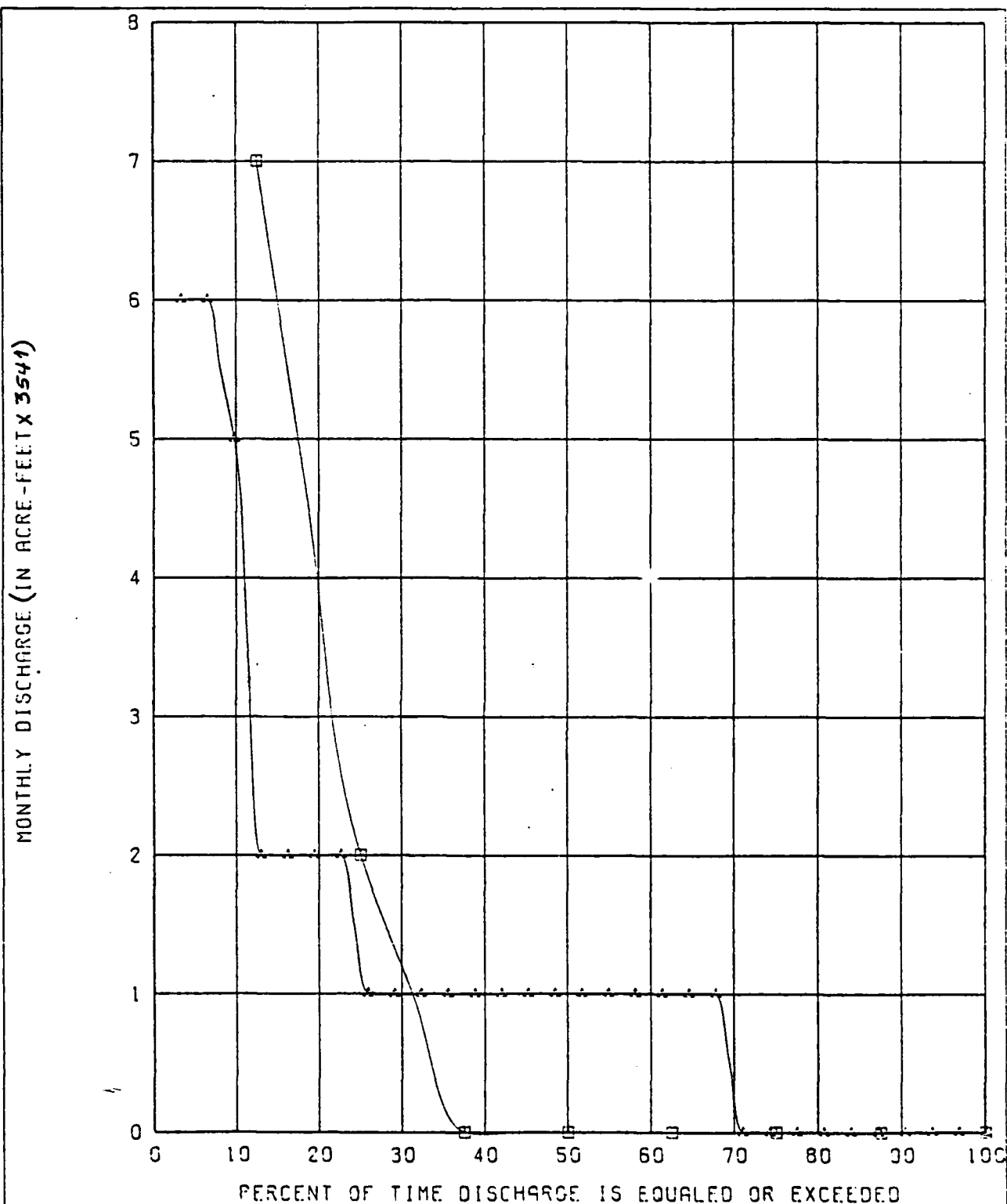
-▲- POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1945-1975)

BUFFALO BAYOU
BARKER RESERVOIR

FLOW DURATION CURVES AT DAM SITE
AUGUST FLOWS

GALVESTON DISTRICT
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 20



LEGEND

- — □ PRE-IMPONDMENT CONDITIONS
(PERIOD OF RECORD 1937-1944)
- △ — △ POST-IMPONDMENT CONDITIONS
(PERIOD OF RECORD 1945-1975)

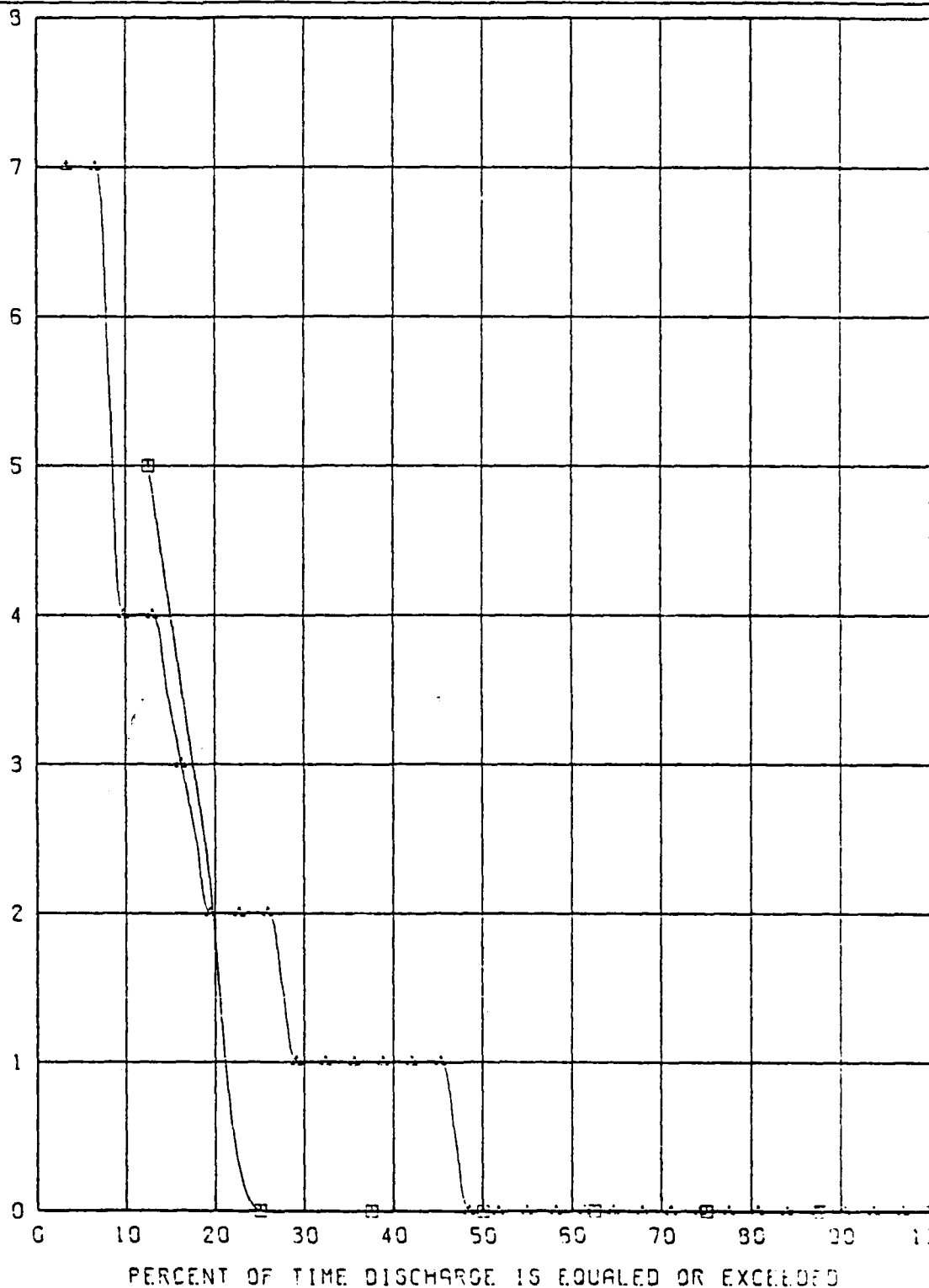
BUFFALO BAYOU
BARKER RESERVOIR

FLOW DURATION CURVES AT DAM SITE
SEPTEMBER FLOWS

GALVESTON DISTRICT
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 21

MONTHLY DISCHARGE (IN ACRE-FEET X 3784)



LEGEND

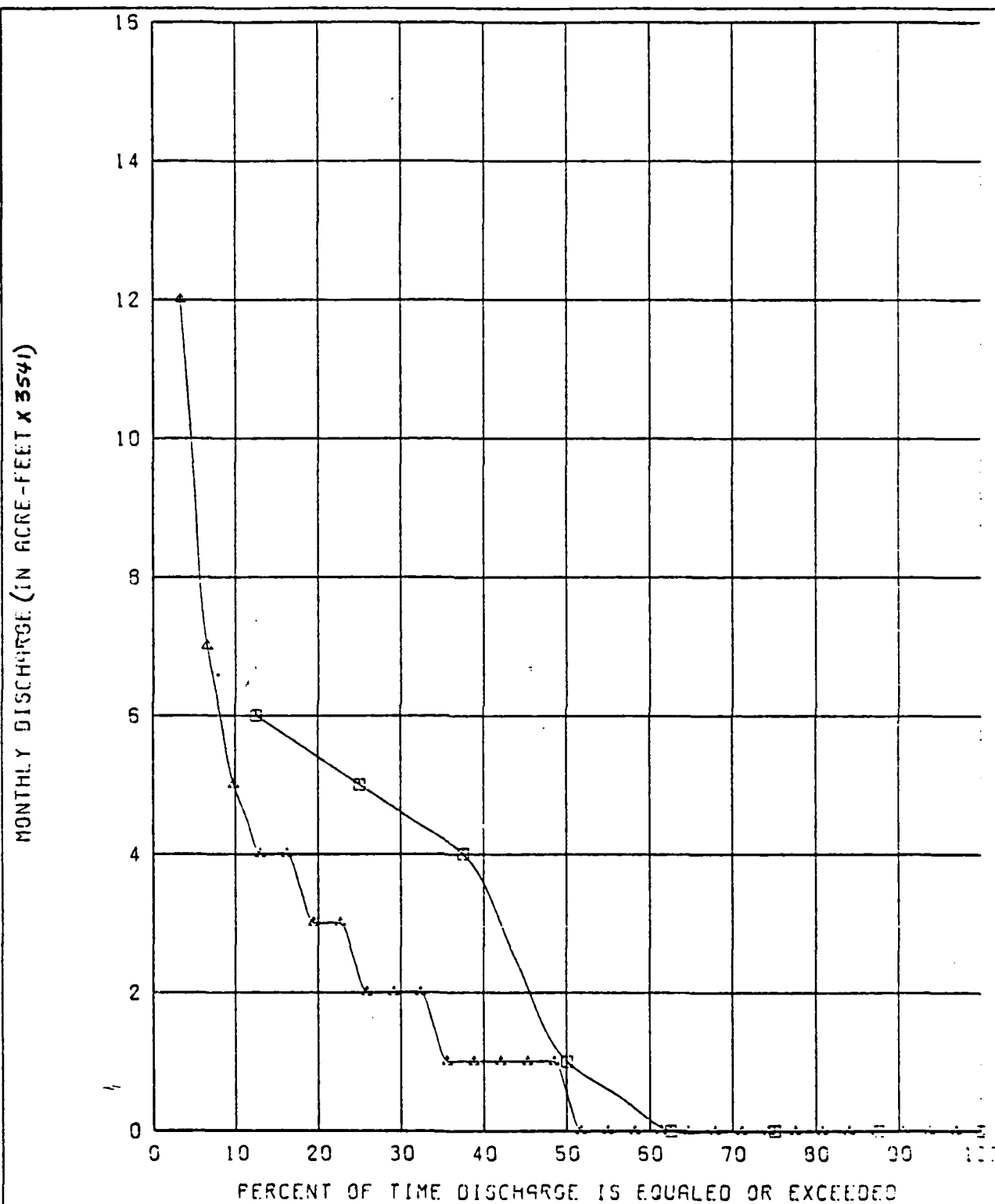
- — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1937-1944)
- △ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1945-1975)

BUFFALO BAYOU
BARKER RESERVOIR

FLOW DURATION CURVES AT DAM SITE
OCTOBER FLOWS

GALVESTON DISTRICT
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 22



LEGEND

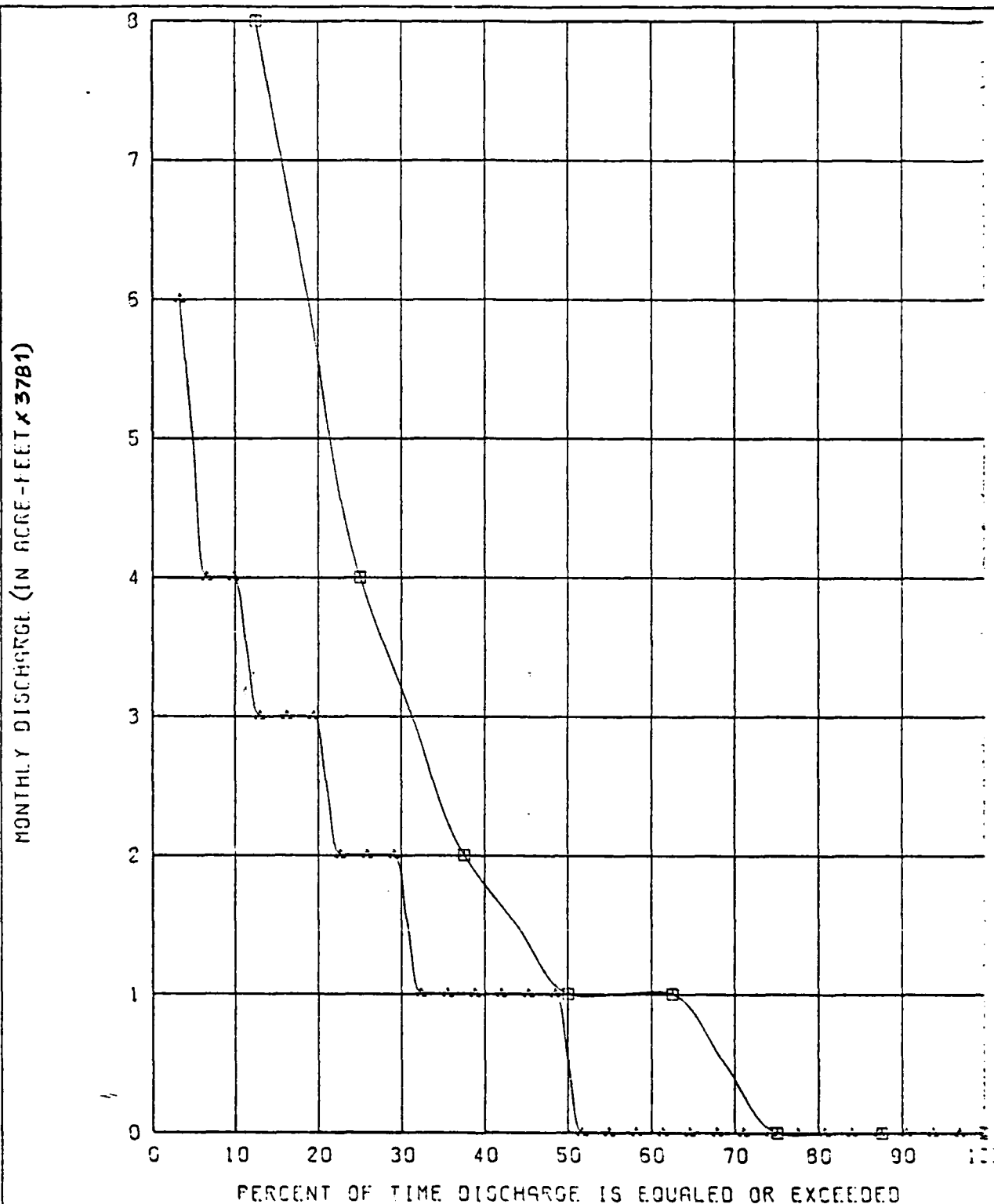
- — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1937-1941)
- △ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1945-1975)

BUFFALO BAYOU
BARKER RESERVOIR



FLOW DURATION CURVES AT DAM SITE
NOVEMBER FLOWS

GALVESTON DISTRICT
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 23



LEGEND

-  PRE-IMPONDMENT CONDITIONS
 (PERIOD OF RECORD 1937-1944)
-  POST-IMPONDMENT CONDITIONS
 (PERIOD OF RECORD 1949-1975)

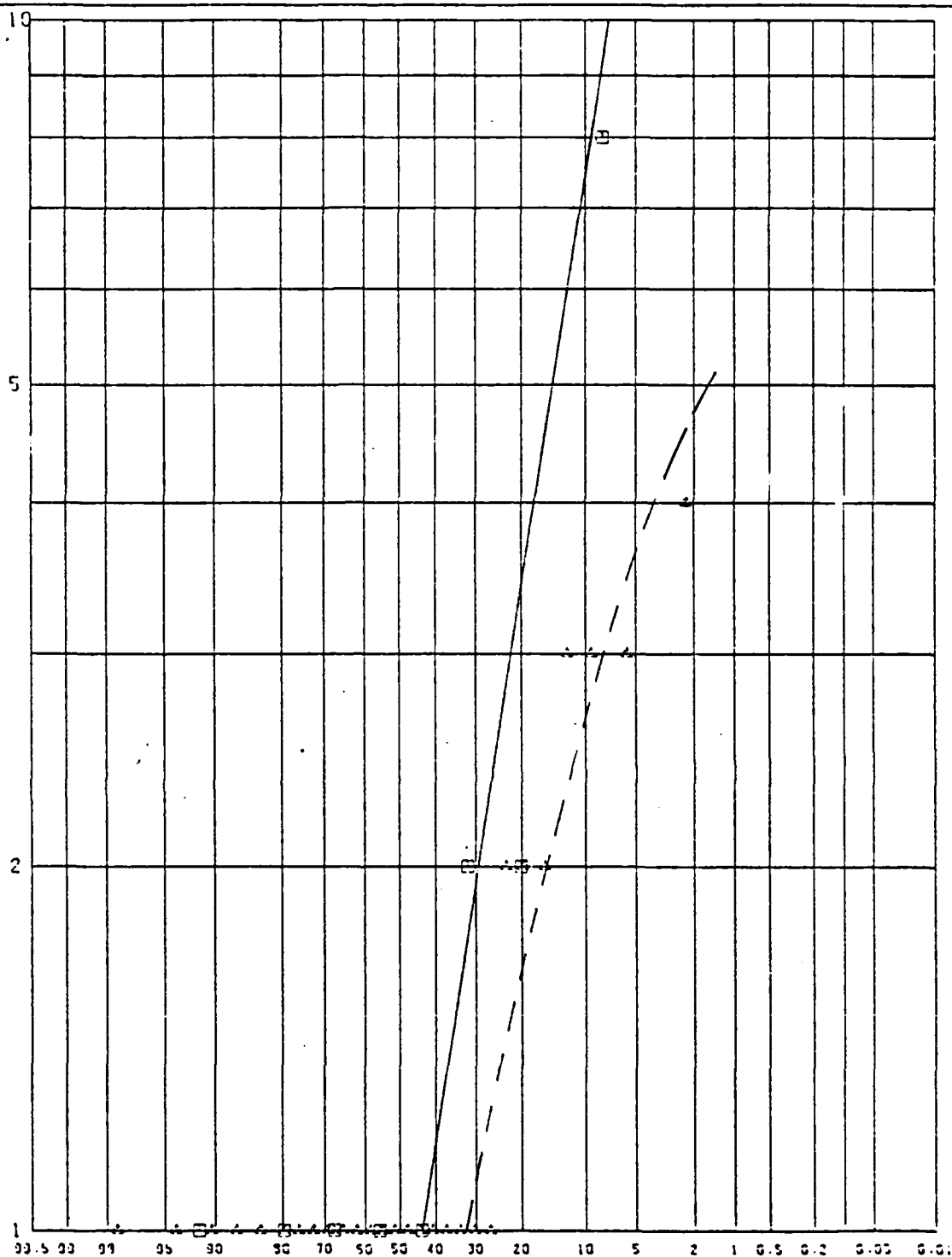
BUFFALO BAYOU
BARKER RESERVOIR

FLOW DURATION CURVES AT DAM SITE
DECEMBER FLOWS

GALVESTON DISTRICT
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 24

MONTHLY DISCHARGE (IN ACRE-FEET X 3781)



EXCEEDANCE FREQUENCY IN PERCENT

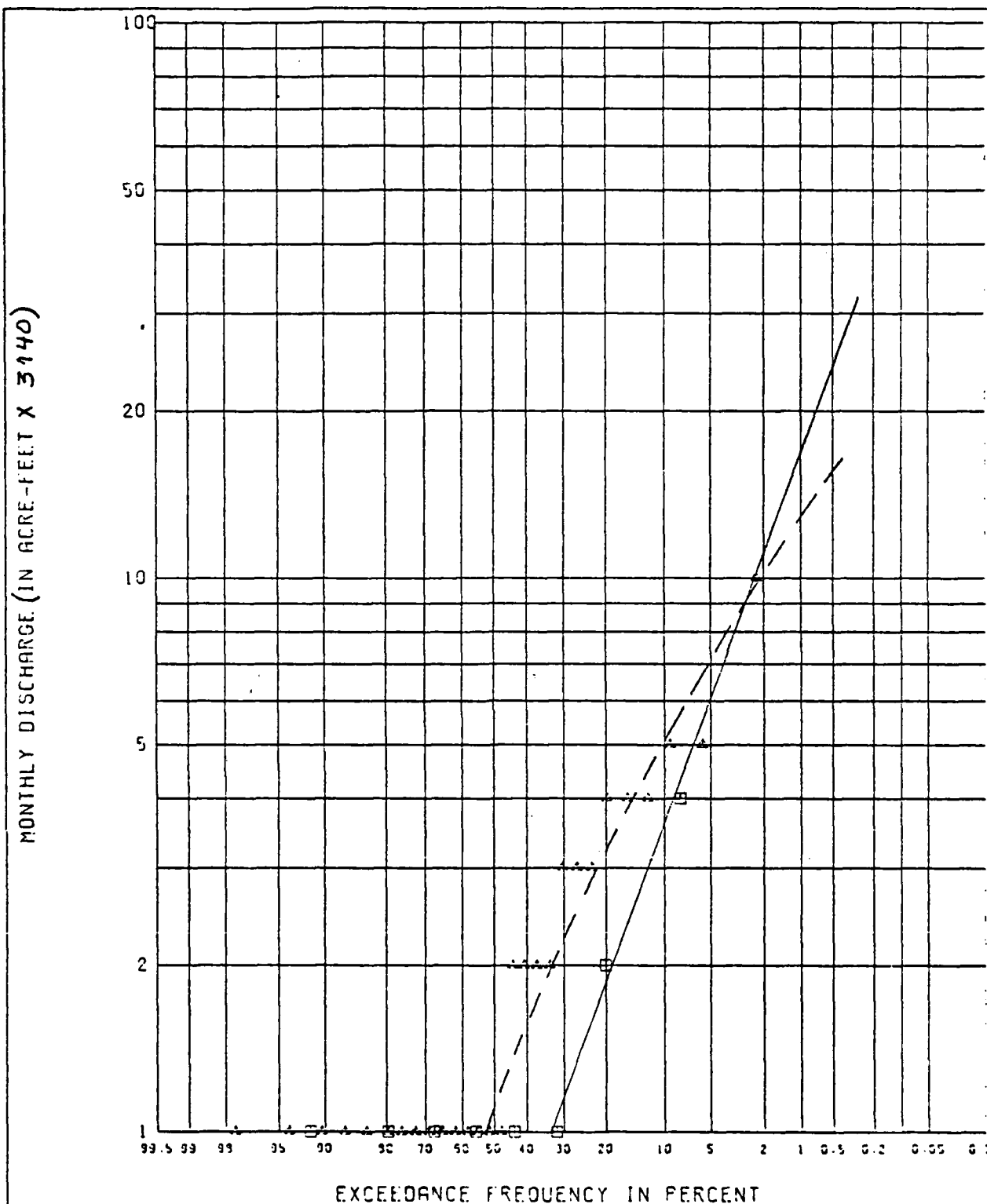
LEGEND

- PRE-IMPOUNDMENT CONDITIONS
 (PERIOD OF RECORD 1937-1944)
- POST-IMPOUNDMENT CONDITIONS
 (PERIOD OF RECORD 1949-1975)

BUFFALO BAYOU
 ADDICKS RESERVOIR
 DISCHARGE-FREQUENCY RELATIONS
 AT DAM SITE
 JANUARY FLOWS

GALVESTON DISTRICT
 TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
 EVALUATION REPORT OF DECEMBER 1980

PLATE 1



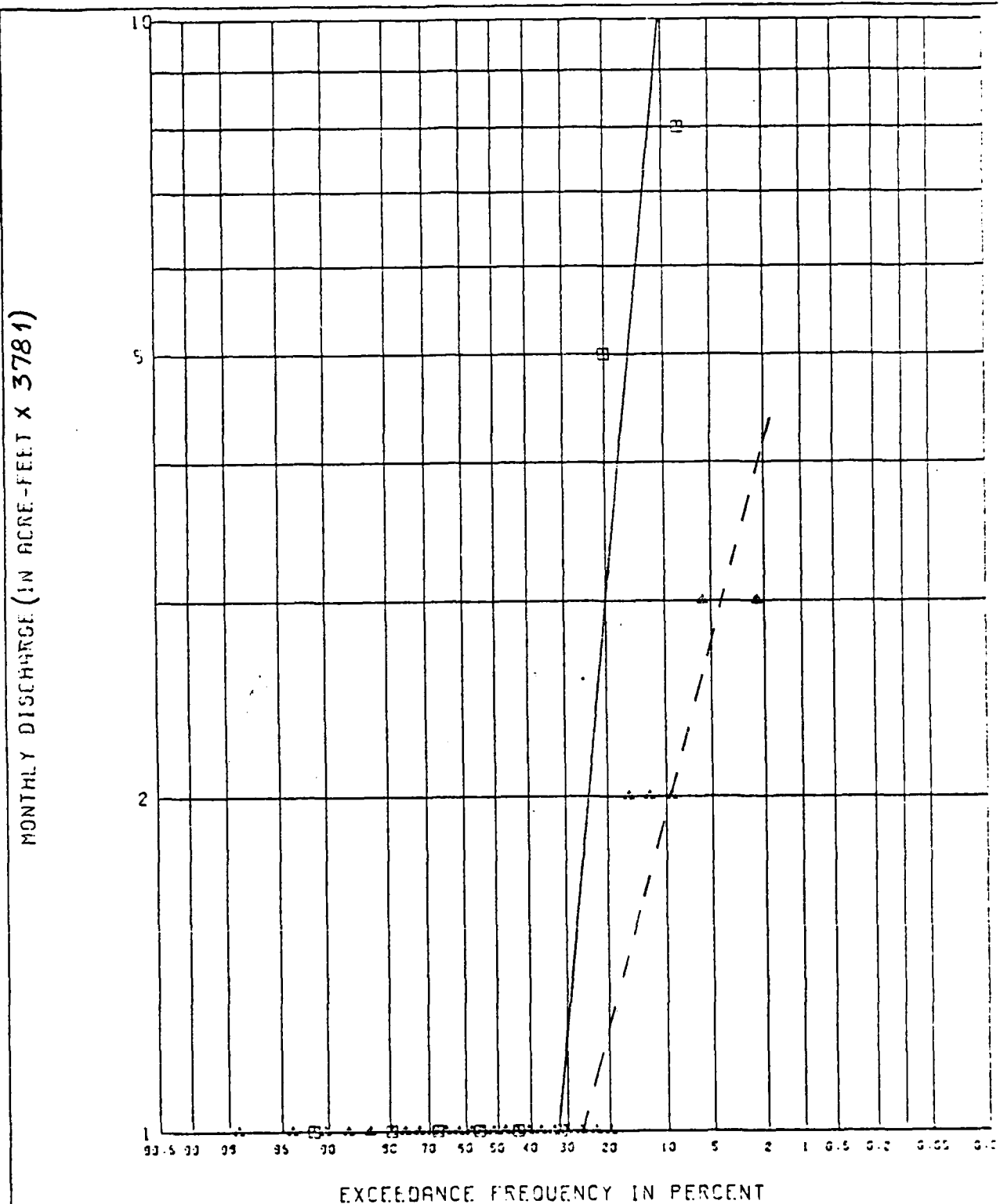
LEGEND

- — PRE-IMPOUNDMENT CONDITIONS
 (PERIOD OF RECORD 1937-1944)
- △ — POST-IMPOUNDMENT CONDITIONS
 (PERIOD OF RECORD 1949-1975)

BUFFALO BAYOU
 ADDICKS RESERVOIR
 DISCHARGE-FREQUENCY RELATIONS
 AT DAM SITE
 FEBRUARY FLOWS

GALVESTON DISTRICT
 TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
 EVALUATION REPORT OF DECEMBER 1990

PLATE 2



LEGEND

—■— PRE-IMPONDMENT CONDITIONS
(PERIOD OF RECORD 1937-1944)

-▲- POST-IMPONDMENT CONDITIONS
(PERIOD OF RECORD 1949-1975)

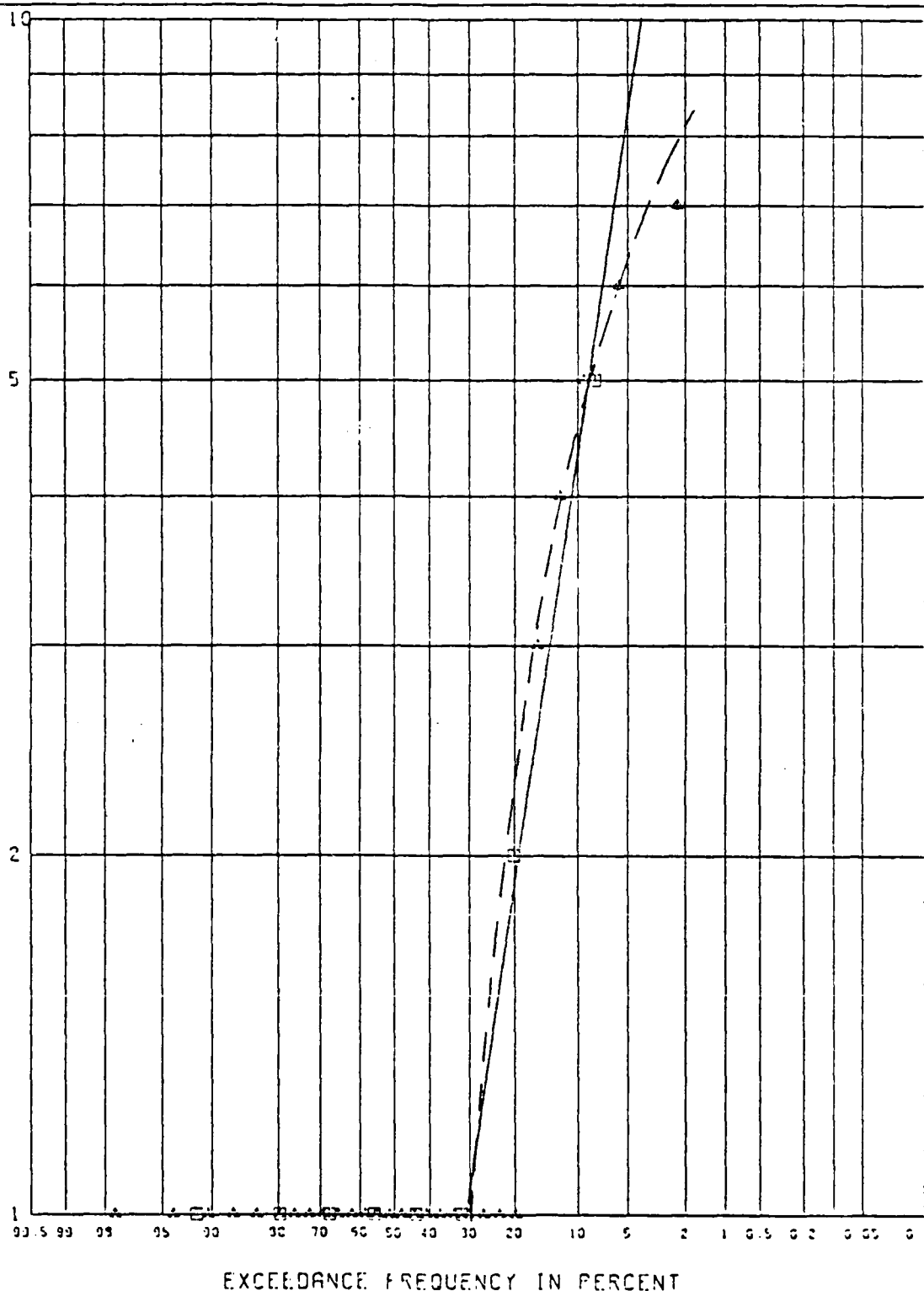
BUFFALO BAYOU
ADDICKS RESERVOIR
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
MARCH FLOWS

GALVESTON DISTRICT

TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 3

MONTHLY DISCHARGE (IN ACRE-FEET X 3541)



EXCEEDANCE FREQUENCY IN PERCENT

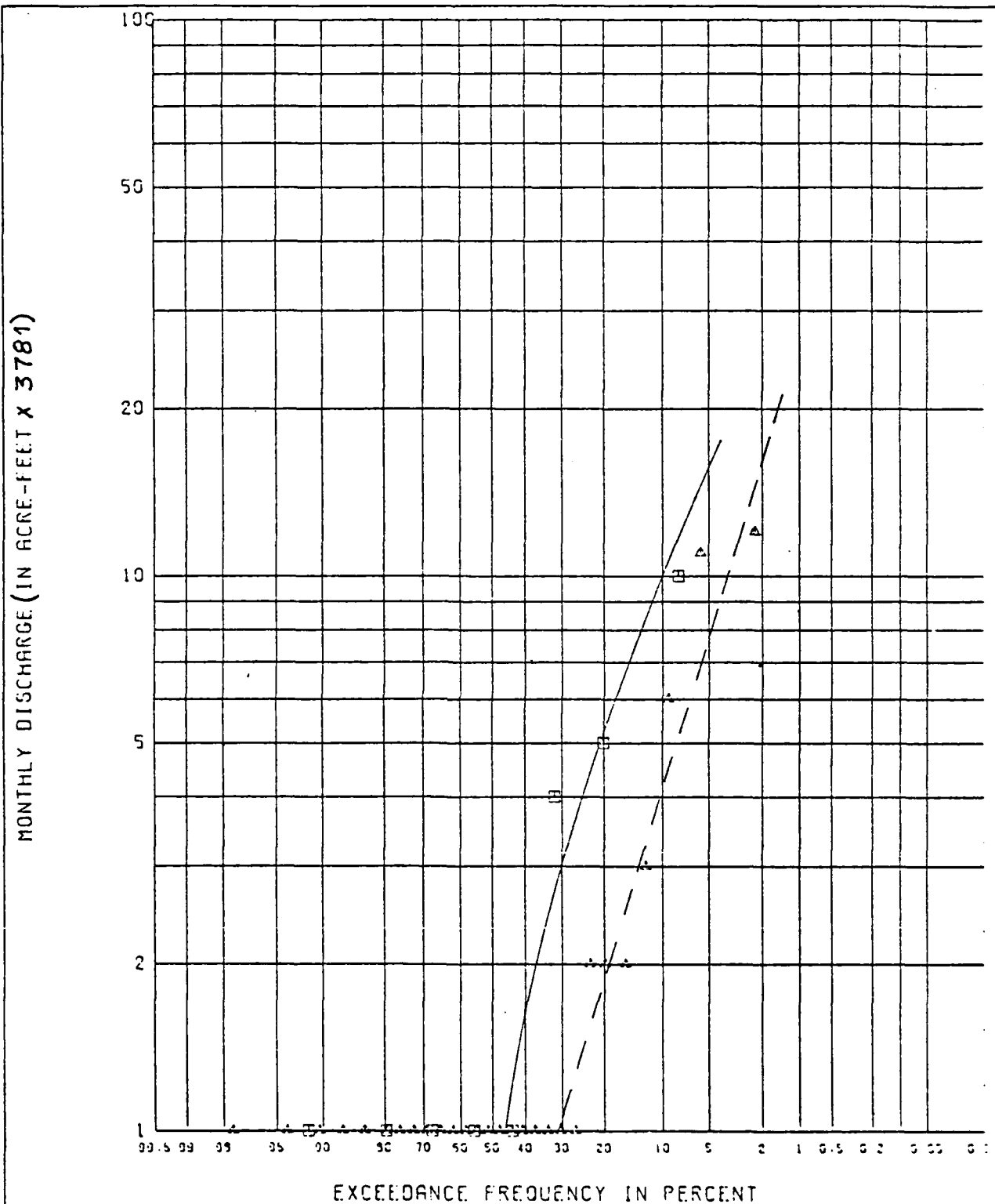
LEGEND

- PRE-IMPOUNDMENT CONDITIONS
 (PERIOD OF RECORD 1937-1941)
- △- POST-IMPOUNDMENT CONDITIONS
 (PERIOD OF RECORD 1943-1975)

BUFFALO BAYOU
 ADDICKS RESERVOIR
 DISCHARGE-FREQUENCY RELATIONS
 AT DAM SITE
 APRIL FLOWS

GALVESTON DISTRICT
 TO ACCOMPANY INSTREAM FLOW PROBLEMS AND WEIR
 EVALUATION REPORT OF DECEMBER 1990

PLATE 4



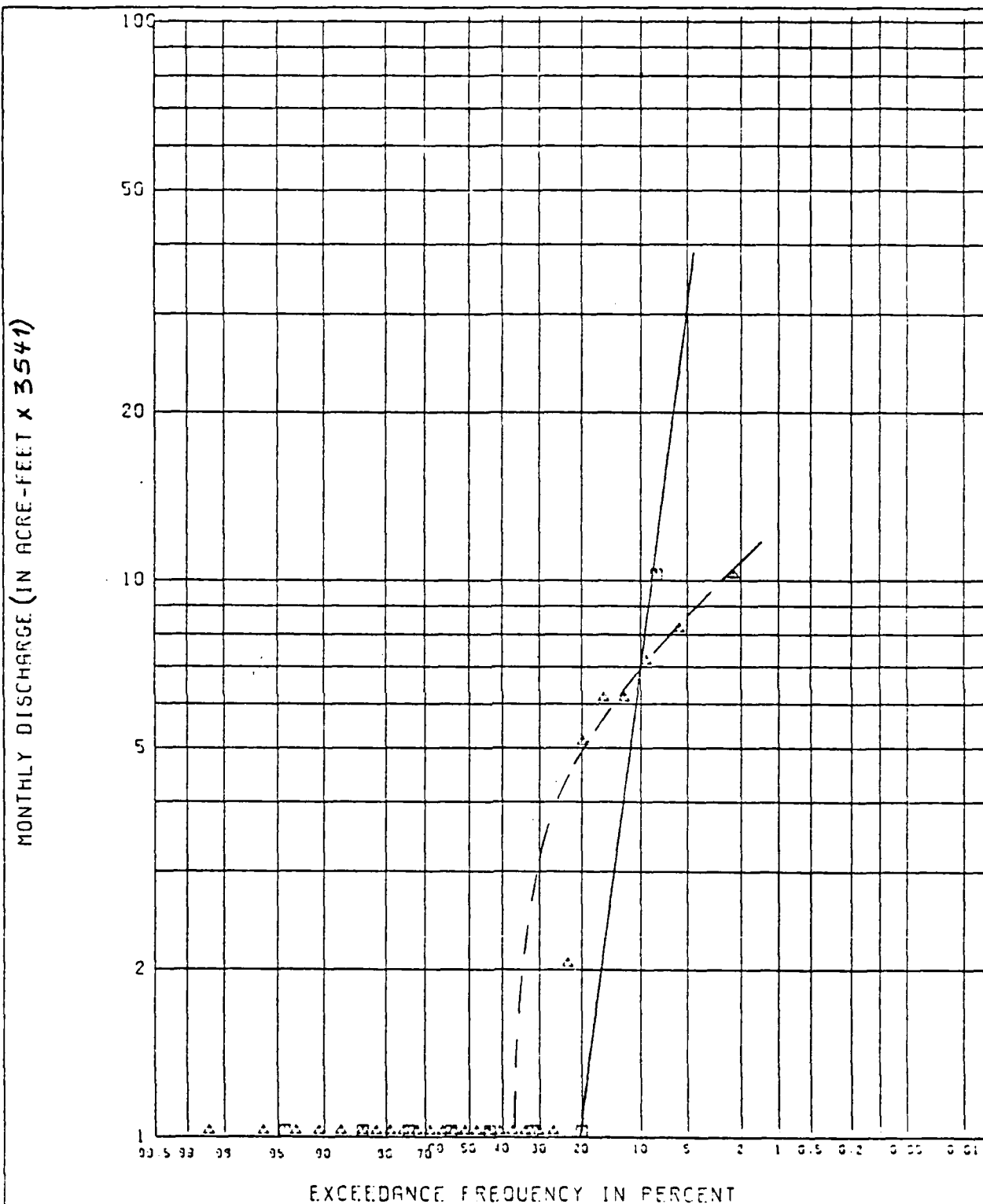
LEGEND

—■— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1937-1964)

- - -△- POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1965-1975)

BUFFALO BAYOU
ADDICKS RESERVOIR
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
MAY FLOWS

GALVESTON DISTRICT
TO ACCOMPANY INDIRECT FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1937-1944)

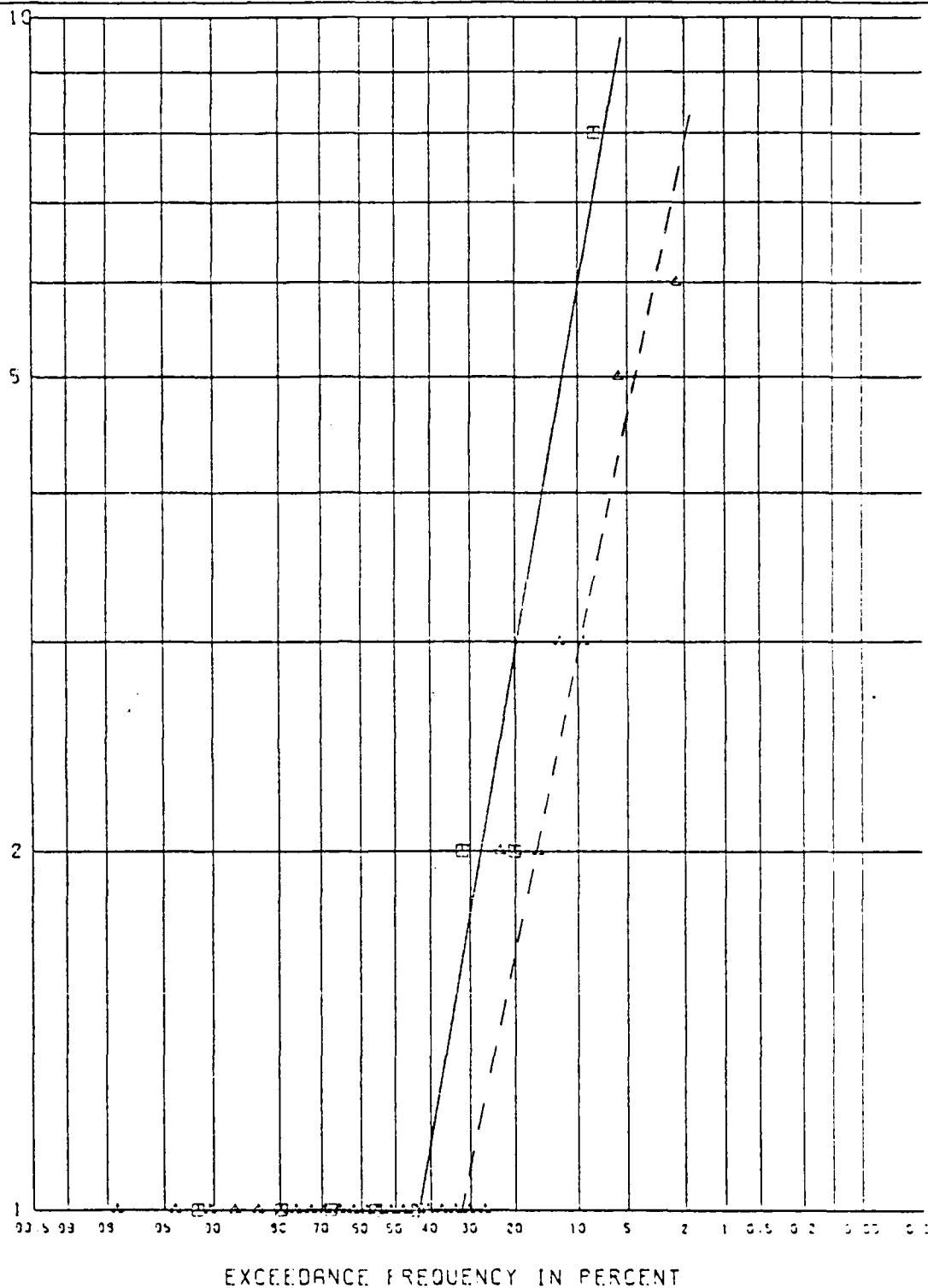
△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1975)

BUFFALO BAYOU
ADDICKS RESERVOIR
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
JUNE FLOWS

GALVESTON DISTRICT
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 1

MONTHLY DISCHARGE (IN ACRE-FEET X 3784)



LEGEND

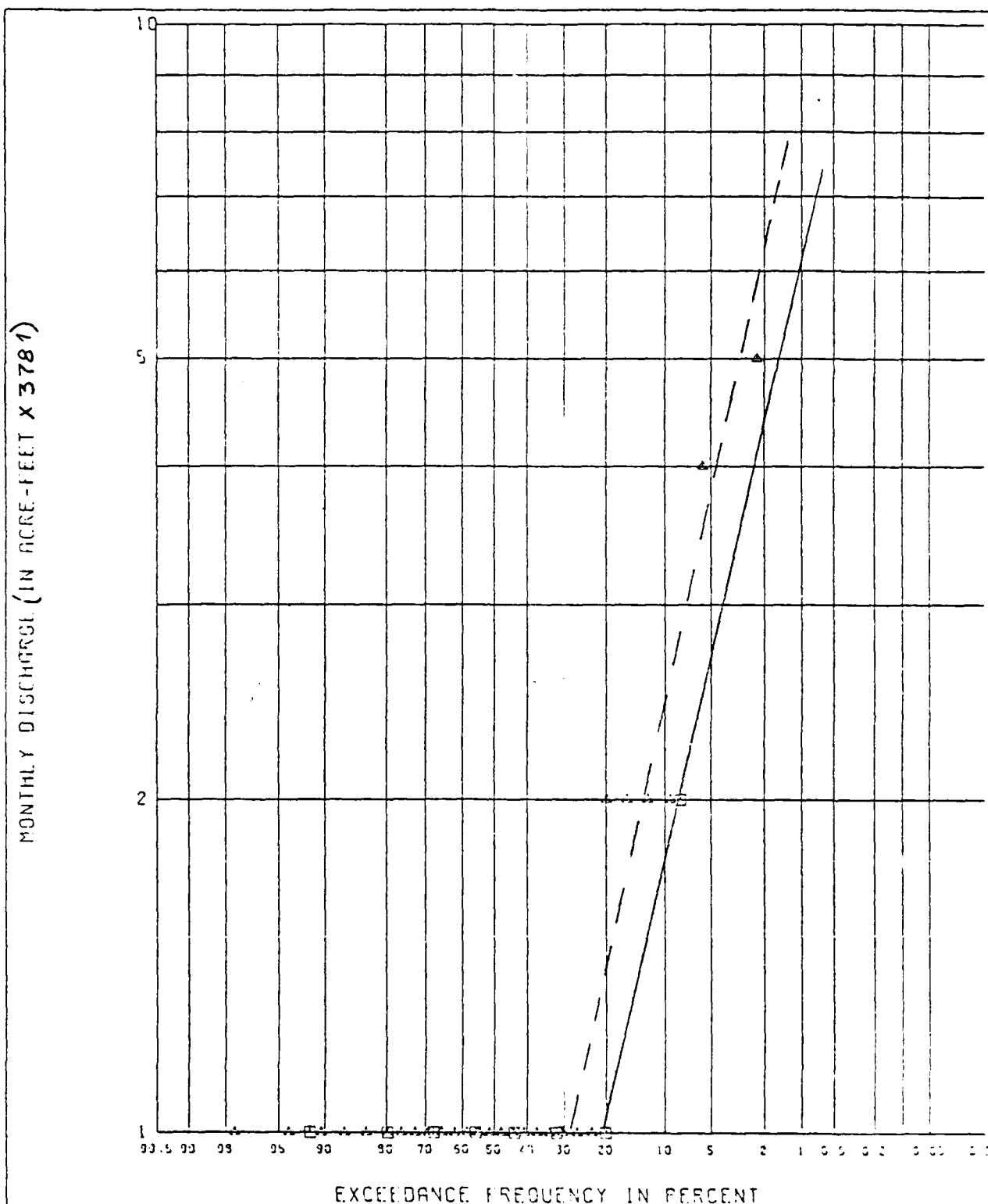
—■— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1937-1944)

-▲- POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1949-1975)

SUFFALO BAYOU
ADDICKS RESERVOIR
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
JULY FLOWS

GALVESTON DISTRICT
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLOT 7



LEGEND

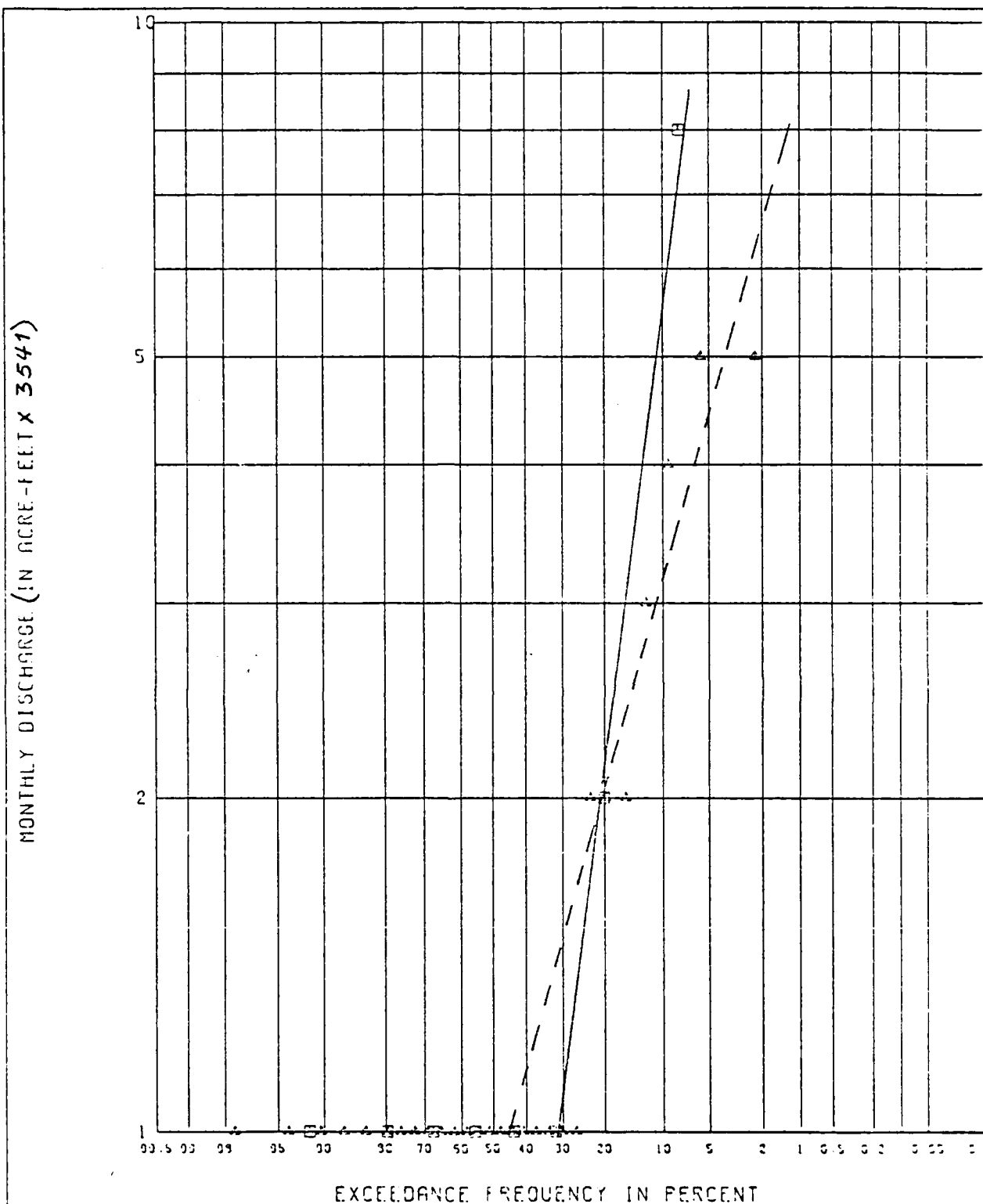
—□— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1937-1941)

—△— POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1942-1975)

BUFFALO BAYOU
ADDICKS RESERVOIR
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
AUGUST FLOWS

GALVESTON DISTRICT
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 8



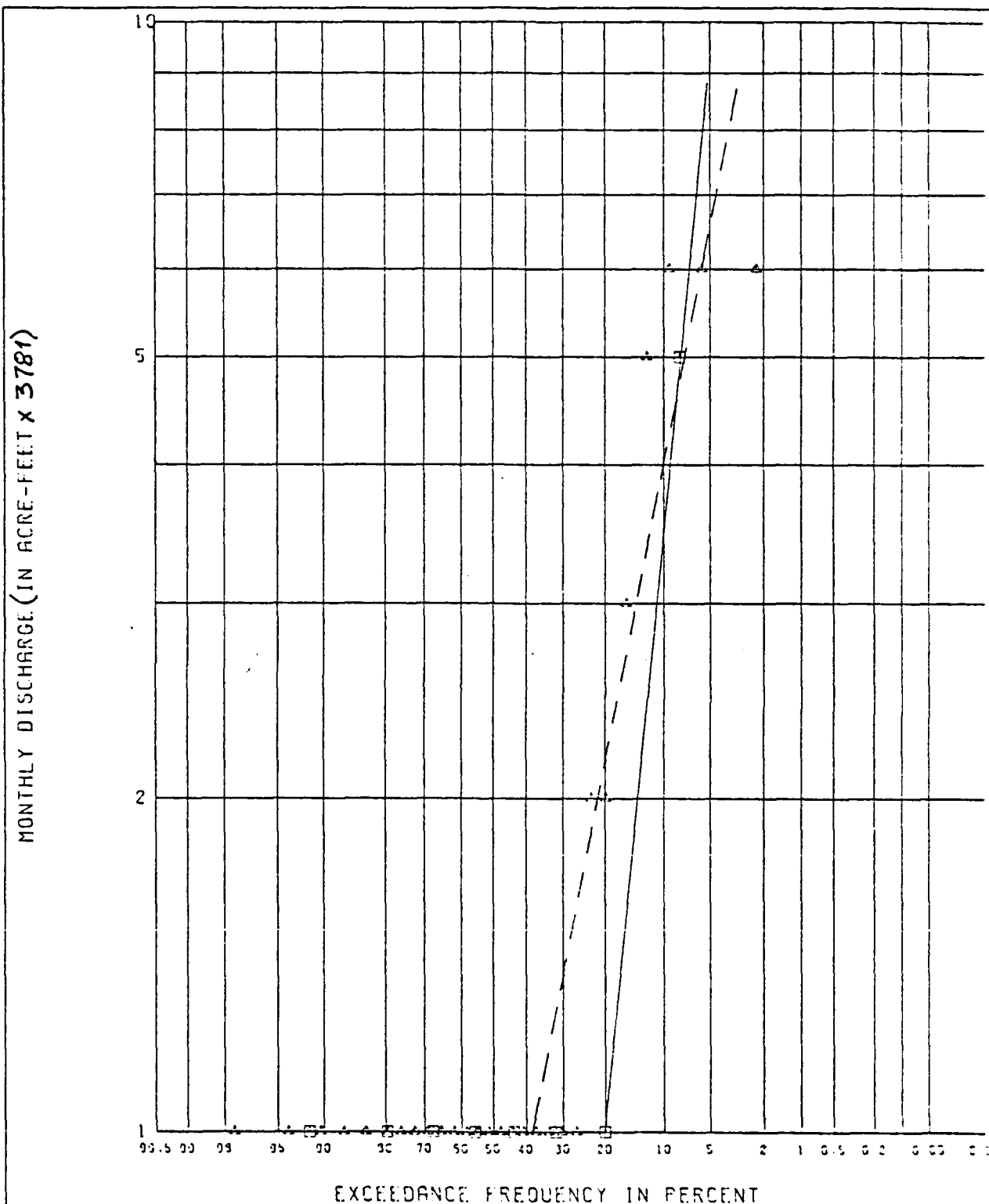
LEGEND

- PRE-IMPOUNDMENT CONDITIONS
 (PERIOD OF RECORD 1937-1974)
- △- POST-IMPOUNDMENT CONDITIONS
 (PERIOD OF RECORD 1913-1975)

BUFFALO BAYOU
 ADDICKS RESERVOIR
 DISCHARGE-FREQUENCY RELATIONS
 AT DAM SITE
 SEPTEMBER FLOWS

GALVESTON DISTRICT
 TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
 EVALUATION REPORT OF DECEMBER 1990

PAGE 10



LEGEND

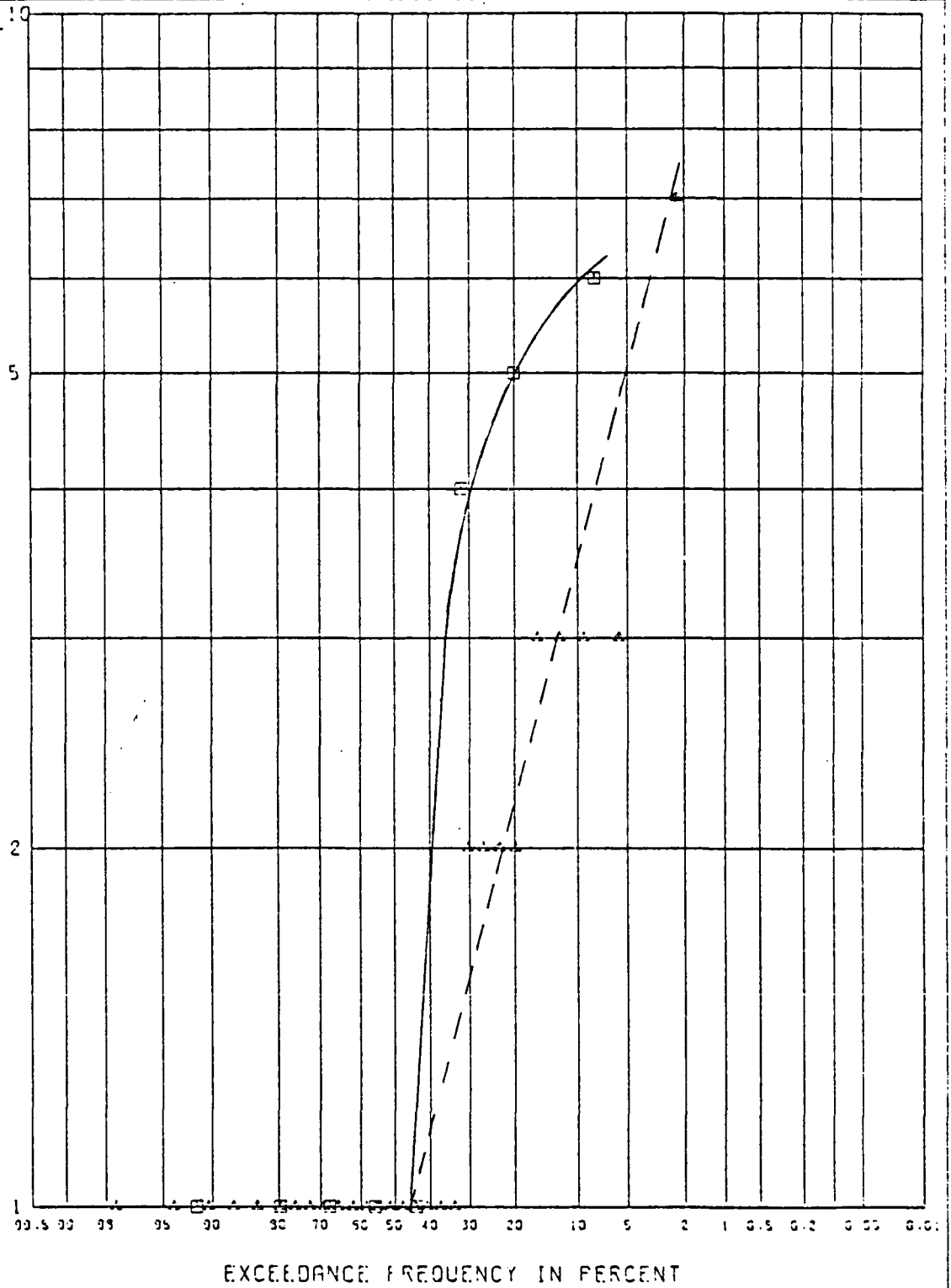
- — □ PRE-IMPONDMENT CONDITIONS
 (PERIOD OF RECORD 1937-1941)
- △ — △ POST-IMPONDMENT CONDITIONS
 (PERIOD OF RECORD 1942-1975)

BUFFALO BAYOU
 ADDICKS RESERVOIR
 DISCHARGE-FREQUENCY RELATIONS
 AT DAM SITE
 OCTOBER FLOWS

GALVESTON DISTRICT
 TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
 EVALUATION REPORT OF DECEMBER 1990

PLATE 10

MONTHLY DISCHARGE (IN ACRE-FEET X 3541)



LEGEND

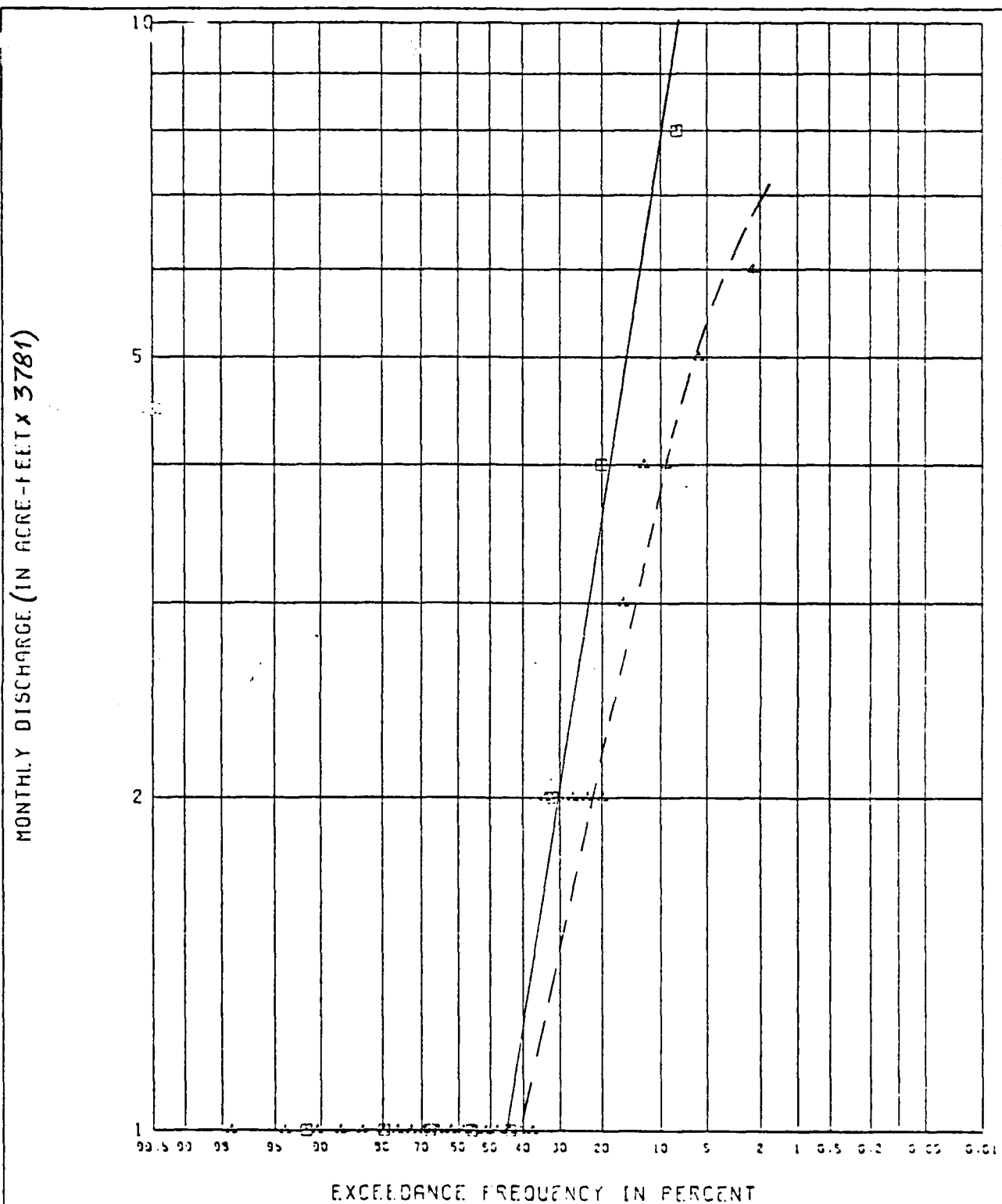
—■— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1937-1944)

-▲- POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1949-1975)

BUFFALO BAYOU
ADDICKS RESERVOIR
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
NOVEMBER FLOWS

GALVESTON DISTRICT
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 44

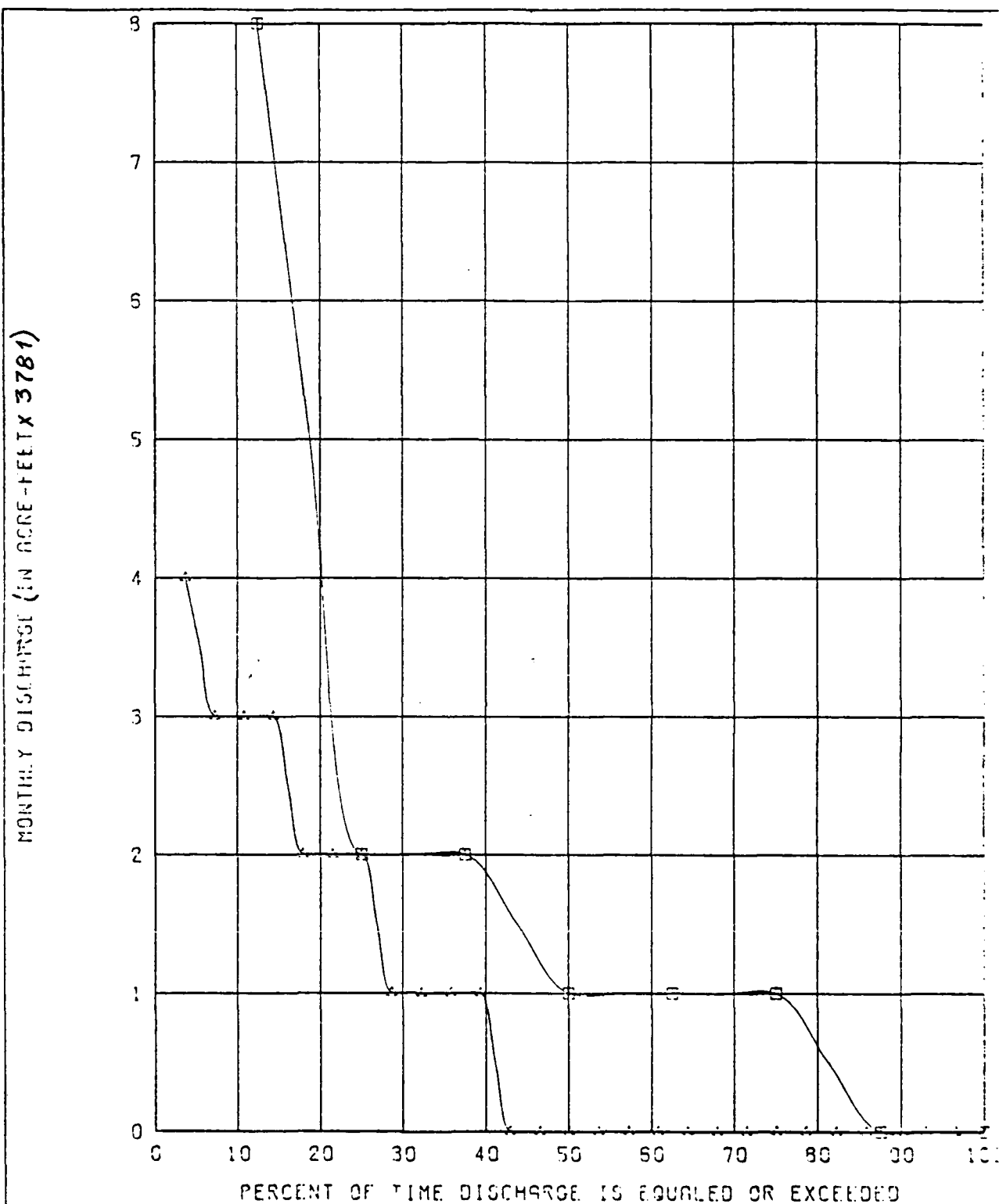


LEGEND

- PRE-IMPONDMENT CONDITIONS
 (PERIOD OF RECORD 1937-1974)
- △- POST-IMPONDMENT CONDITIONS
 (PERIOD OF RECORD 1913-1975)

BUFFALO BAYOU
 ADDICKS RESERVOIR
 DISCHARGE-FREQUENCY RELATIONS
 AT DAM SITE
 DECEMBER FLOWS

GALVESTON DISTRICT
 TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
 EVALUATION REPORT OF DECEMBER 1990



LEGEND

— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1937-1944)

— POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1945-1975)

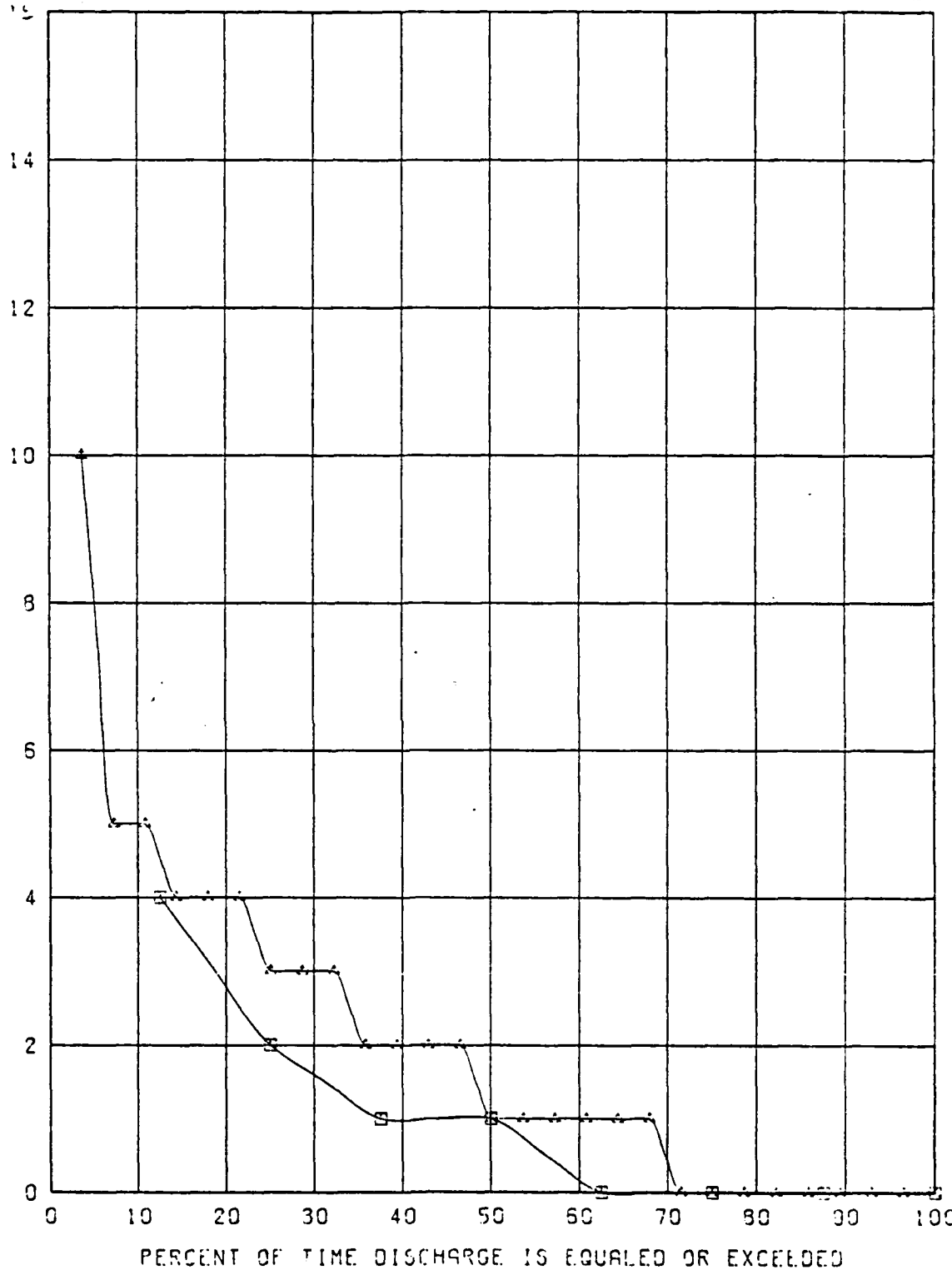
BUFFALO BAYOU
ADDICKS RESERVOIR

FLOW DURATION CURVES AT DAM SITE
JANUARY FLOWS

GALVESTON DISTRICT
TO ACCOMMODATE INSPECTOR FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 13

MONTHLY DISCHARGE (IN ACRE-FEET X 5/40)



LEGEND

- PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1937-1941)
- ▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1943-1975)

BUFFALO BAYOU

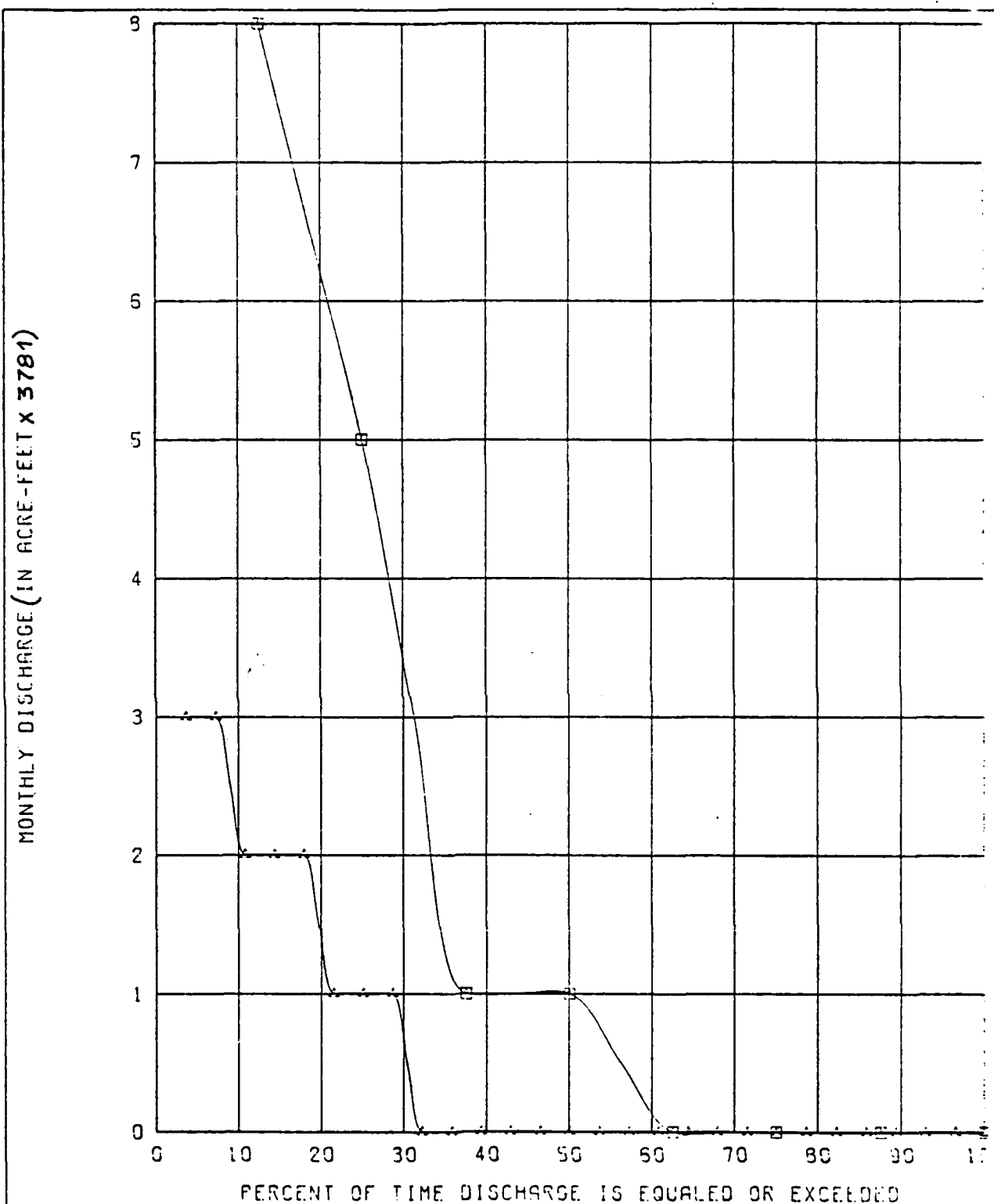
ADDICKS RESERVOIR

FLOW DURATION CURVES AT DAM SITE
FEBRUARY FLOWS

GALVESTON DISTRICT

TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLOT 44



LEGEND

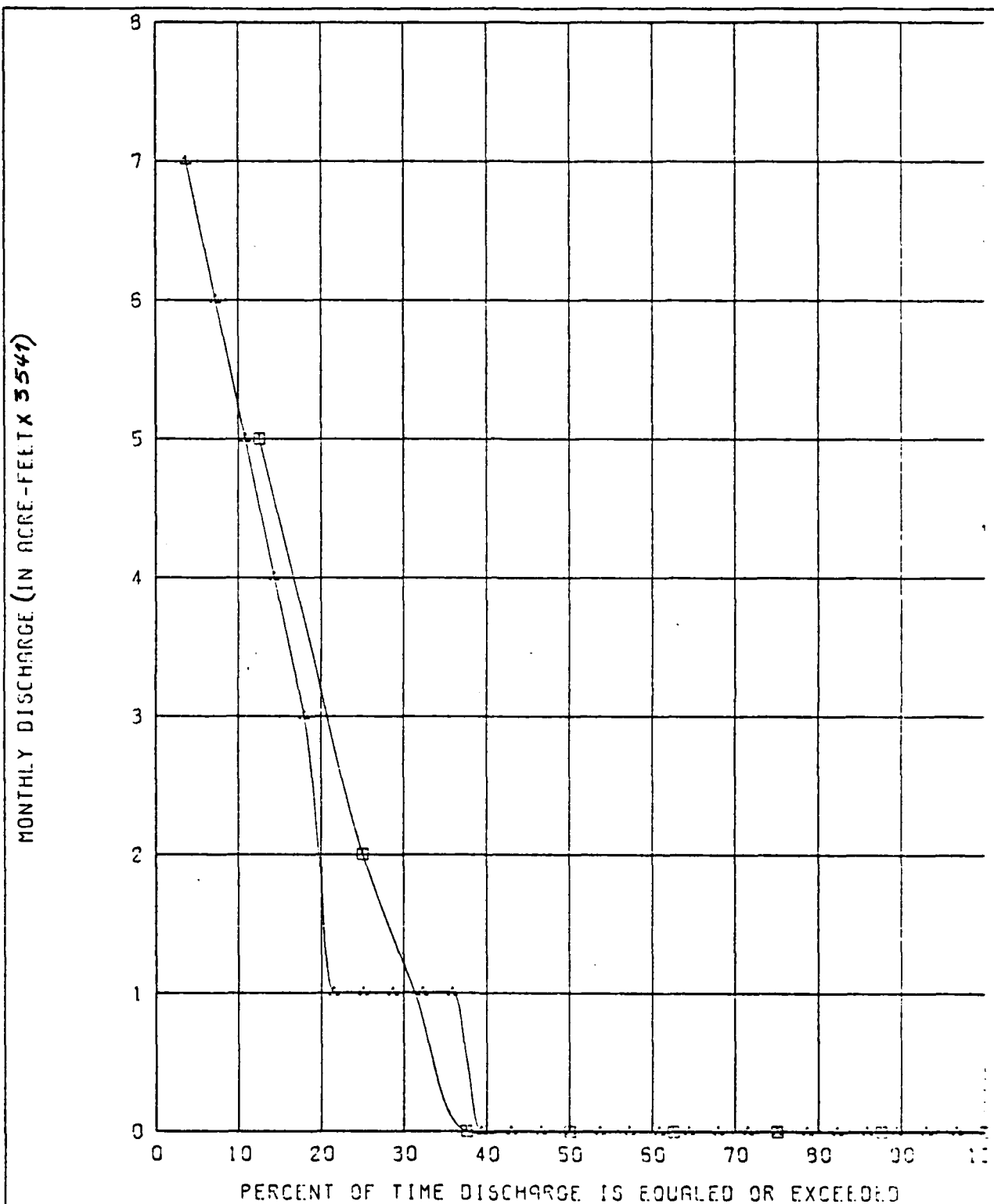
- — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1937-1944)
- △ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1949-1975)

BUFFALO BAYOU
ADDICKS RESERVOIR

FLOW DURATION CURVES AT DAM SITE
MARCH FLOWS

GALVESTON DISTRICT
TO ACCOMPANY IN-STREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 45



LEGEND

- — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1937-1941)
- △ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1943-1975)

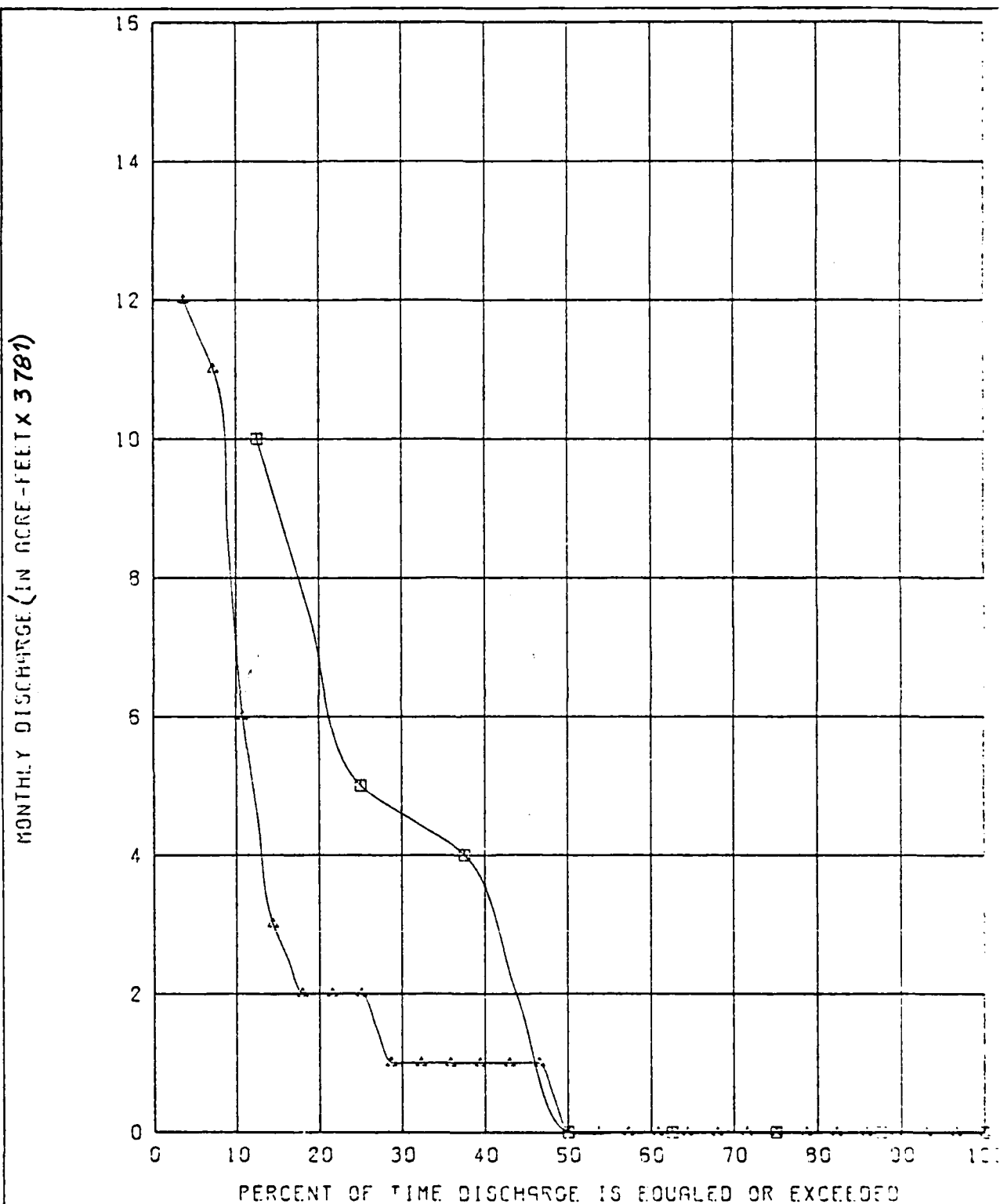
BUFFALO BAYOU
ADDICKS RESERVOIR

FLOW DURATION CURVES AT DAM SITE
APRIL FLOWS

GALVESTON DISTRICT

TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLOT 47



LEGEND

□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1937-1941)

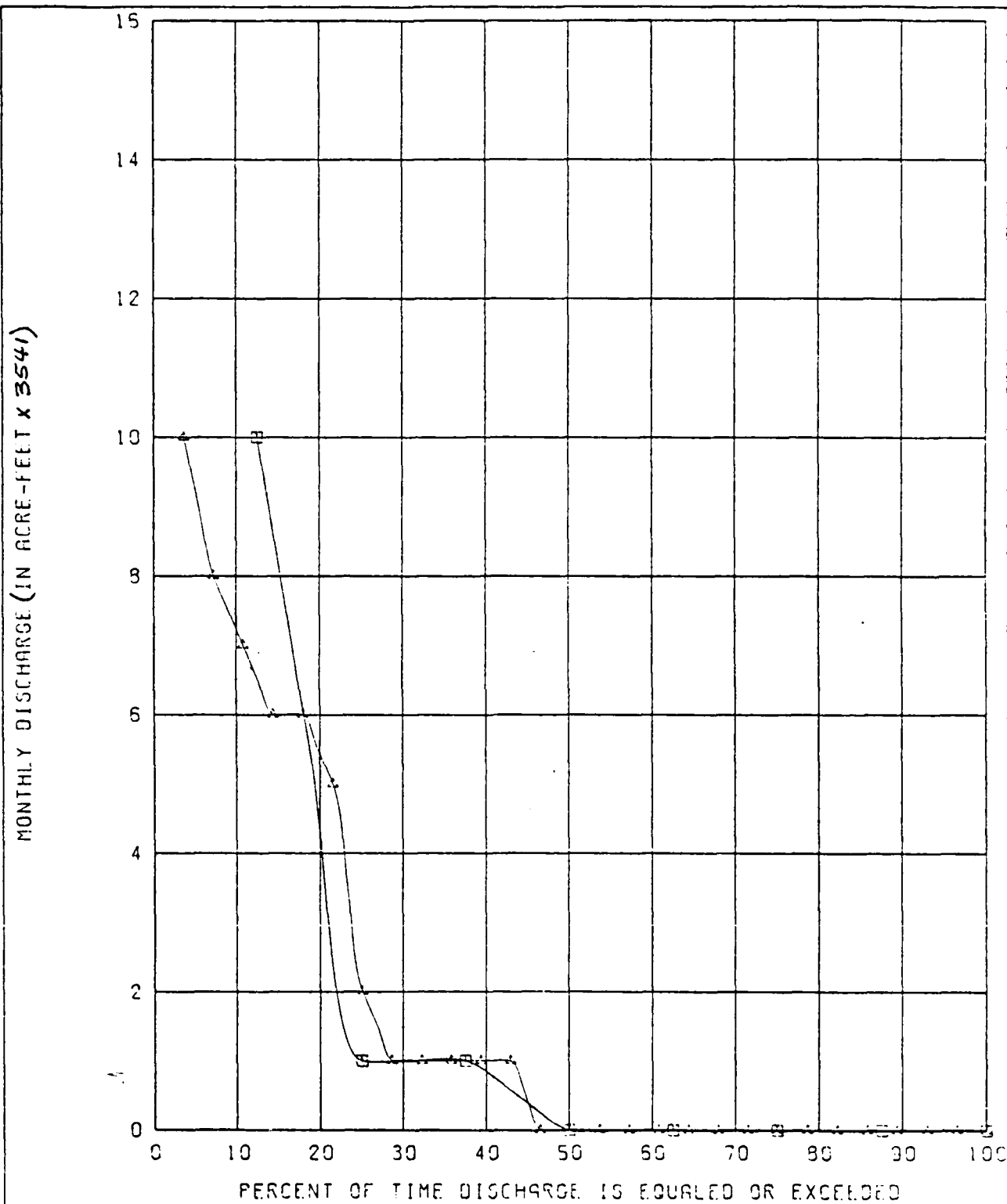
△ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1940-1975)

BUFFALO BAYOU
ADDICKS RESERVOIR

FLOW DURATION CURVES AT DAM SITE
MAY FLOWS

DALVESTON DISTRICT
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 47



LEGEND

- PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1937-1941)
- △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1943-1975)

BUFFALO BAYOU

ADDICKS RESERVOIR

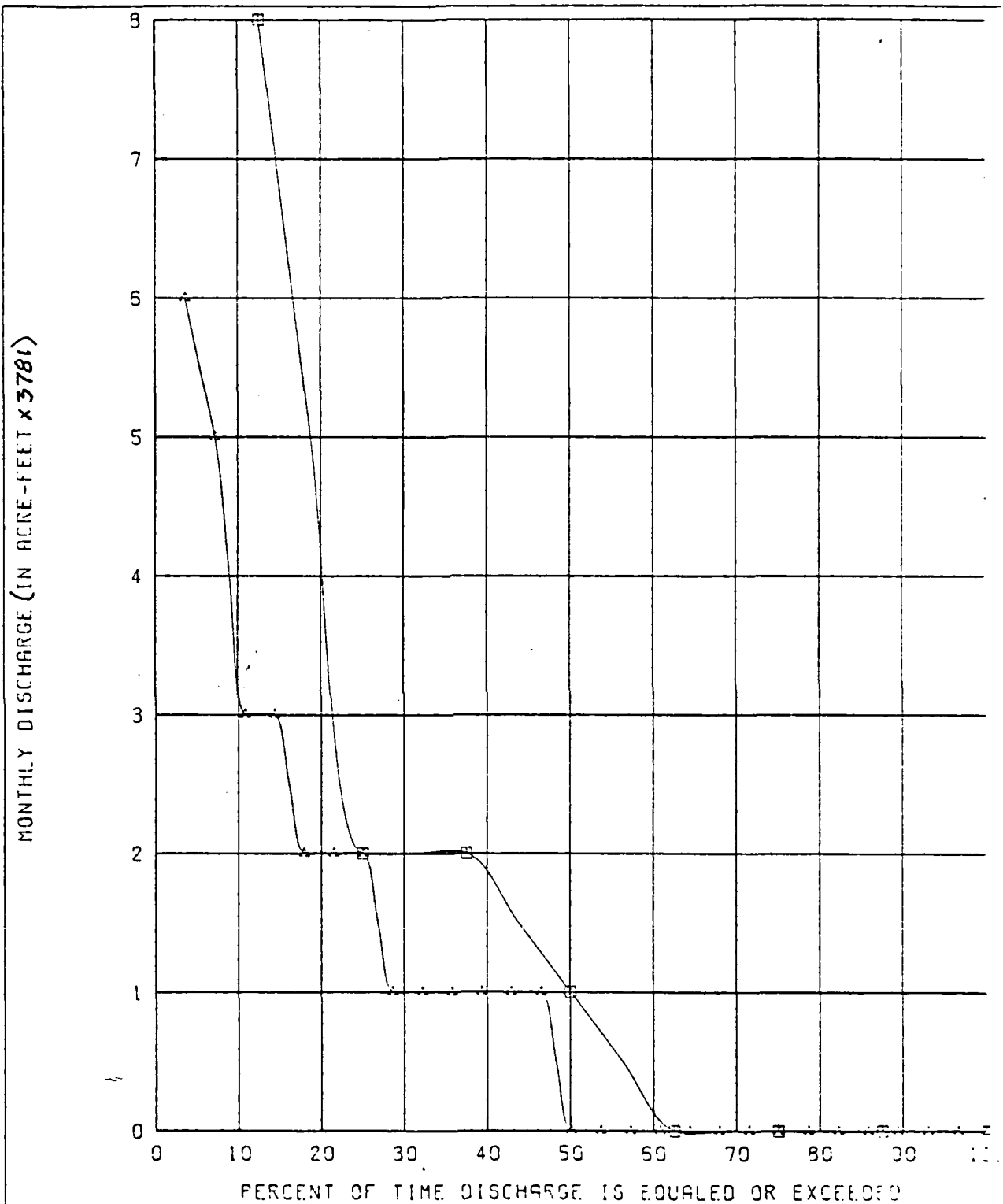
FLOW DURATION CURVES AT DAM SITE

JUNE FLOWS

GALVESTON DISTRICT

TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

C-101-10



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1937-1941)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1949-1975)

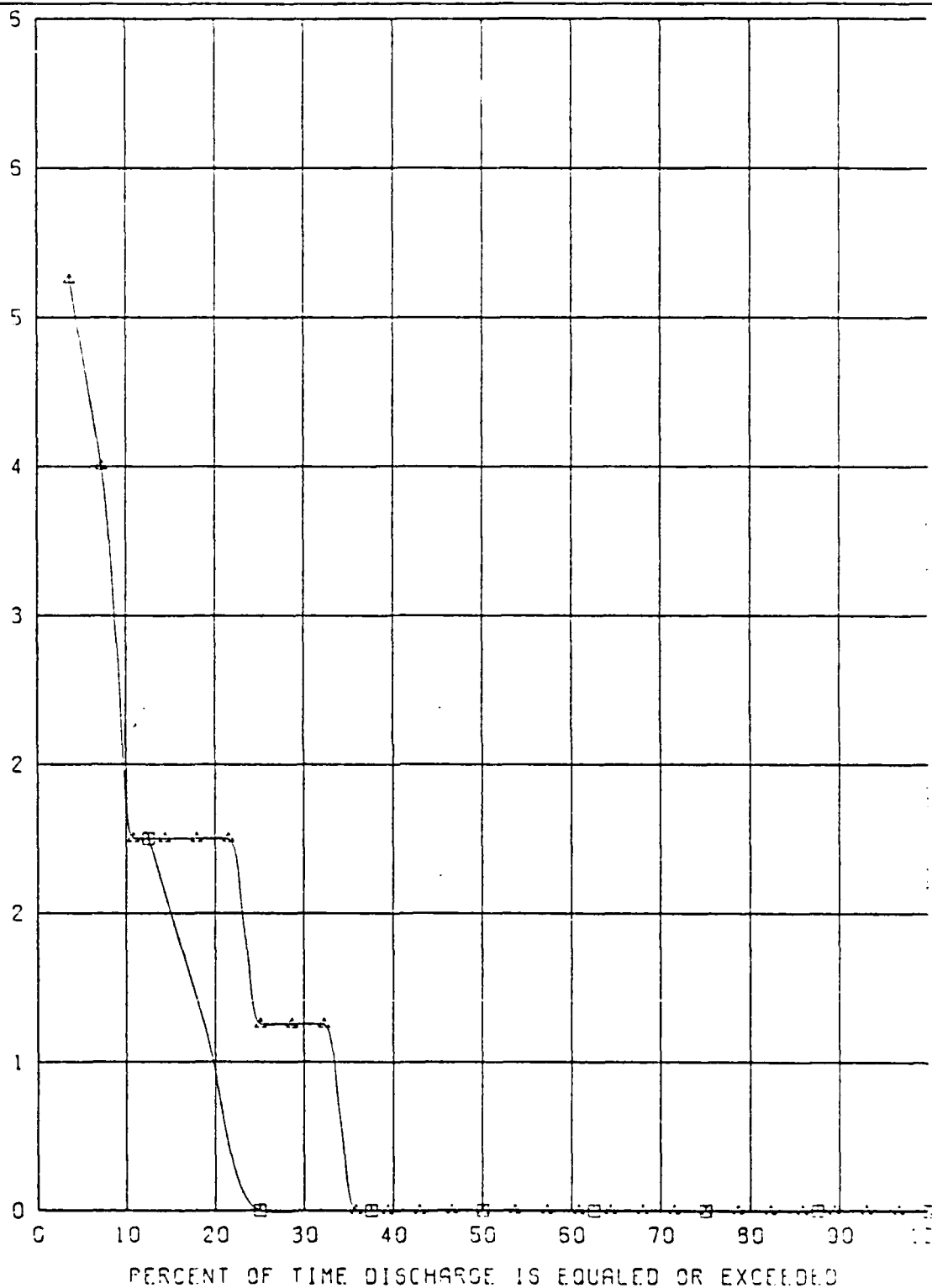
BUFFALO BAYOU
ADDICKS RESERVOIR

FLOW DURATION CURVES AT DAM SITE
JULY FLOWS

GALVESTON DISTRICT
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 40

MONTHLY DISCHARGE (IN ACRE-FEET X 3781)



LEGEND

- PRE-IMPOUNDMENT CONDITIONS
 (PERIOD OF RECORD 1937-1944)
- △- POST-IMPOUNDMENT CONDITIONS
 (PERIOD OF RECORD 1949-1975)

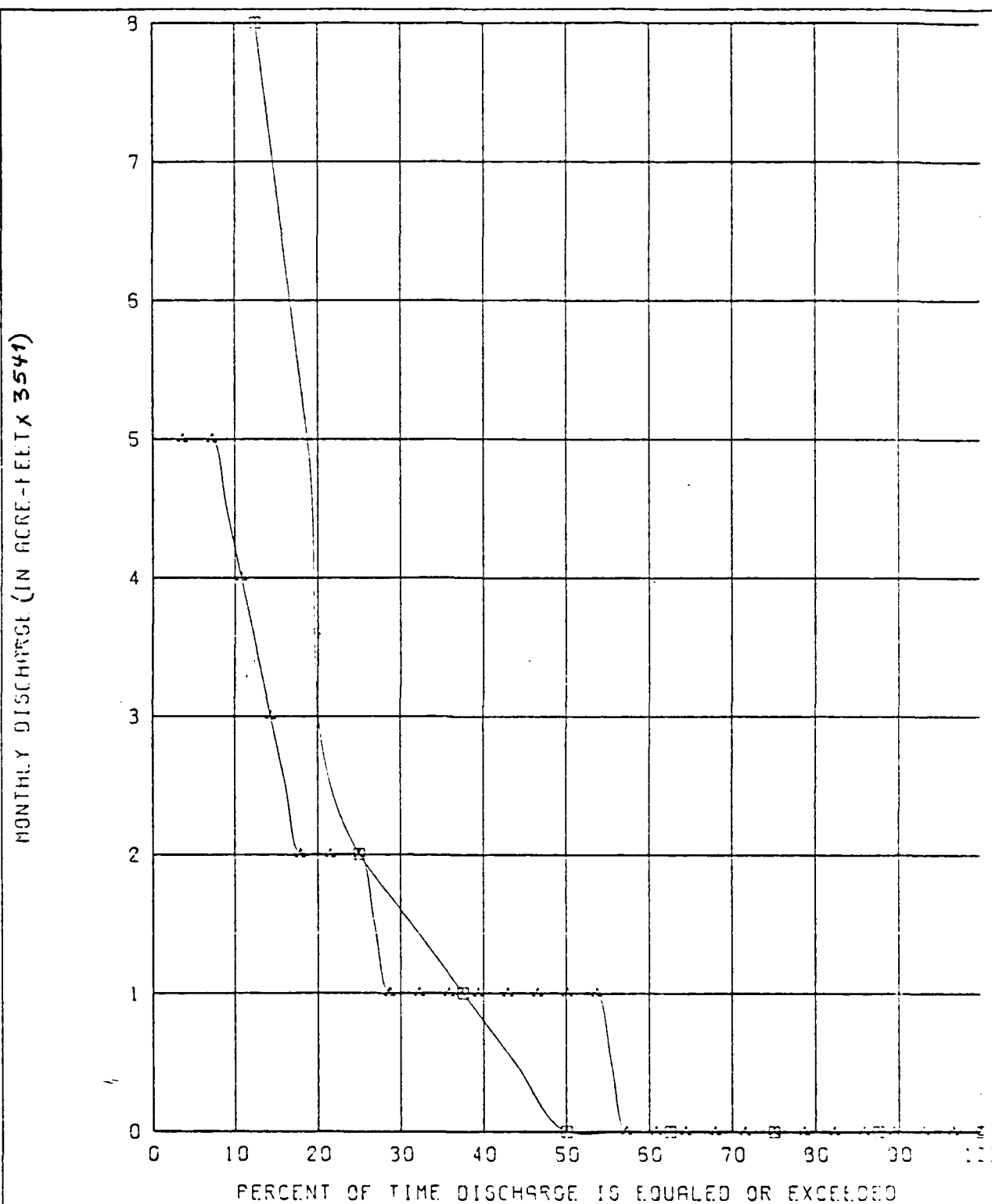
BUFFALO BRIDGE

ADDICKS RESERVOIR

FLOW DURATION CURVES AT DAM SITE
AUGUST FLOWS

SALVESTON DISTRICT
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 20



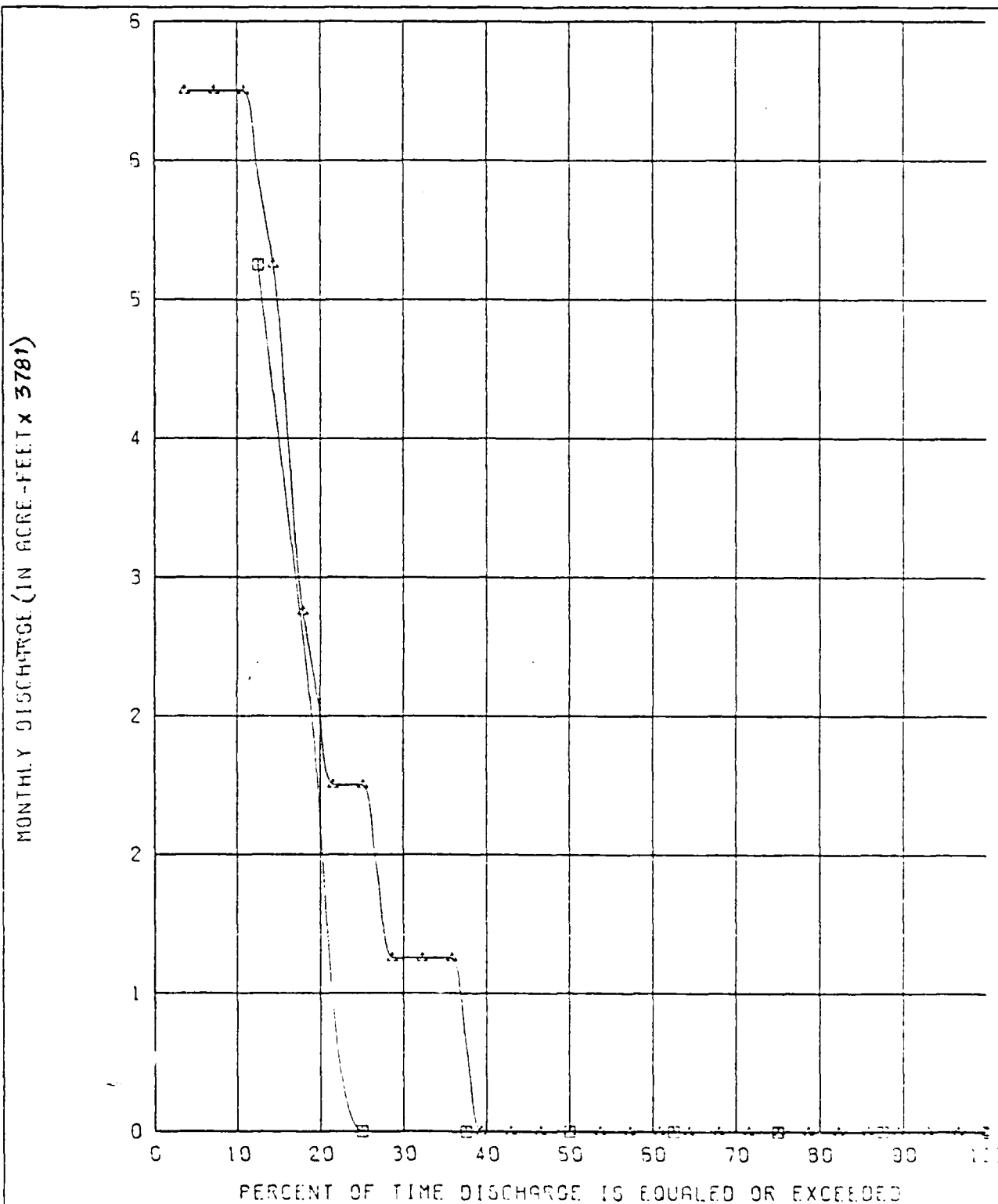
LEGEND

- — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1937-1944)
- △ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1943-1975)

BUFFALO BAYOU
ADDICKS RESERVOIR

FLOW DURATION CURVES AT DAM SITE
SEPTEMBER FLOWS

SALVESTON DISTRICT
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980



LEGEND

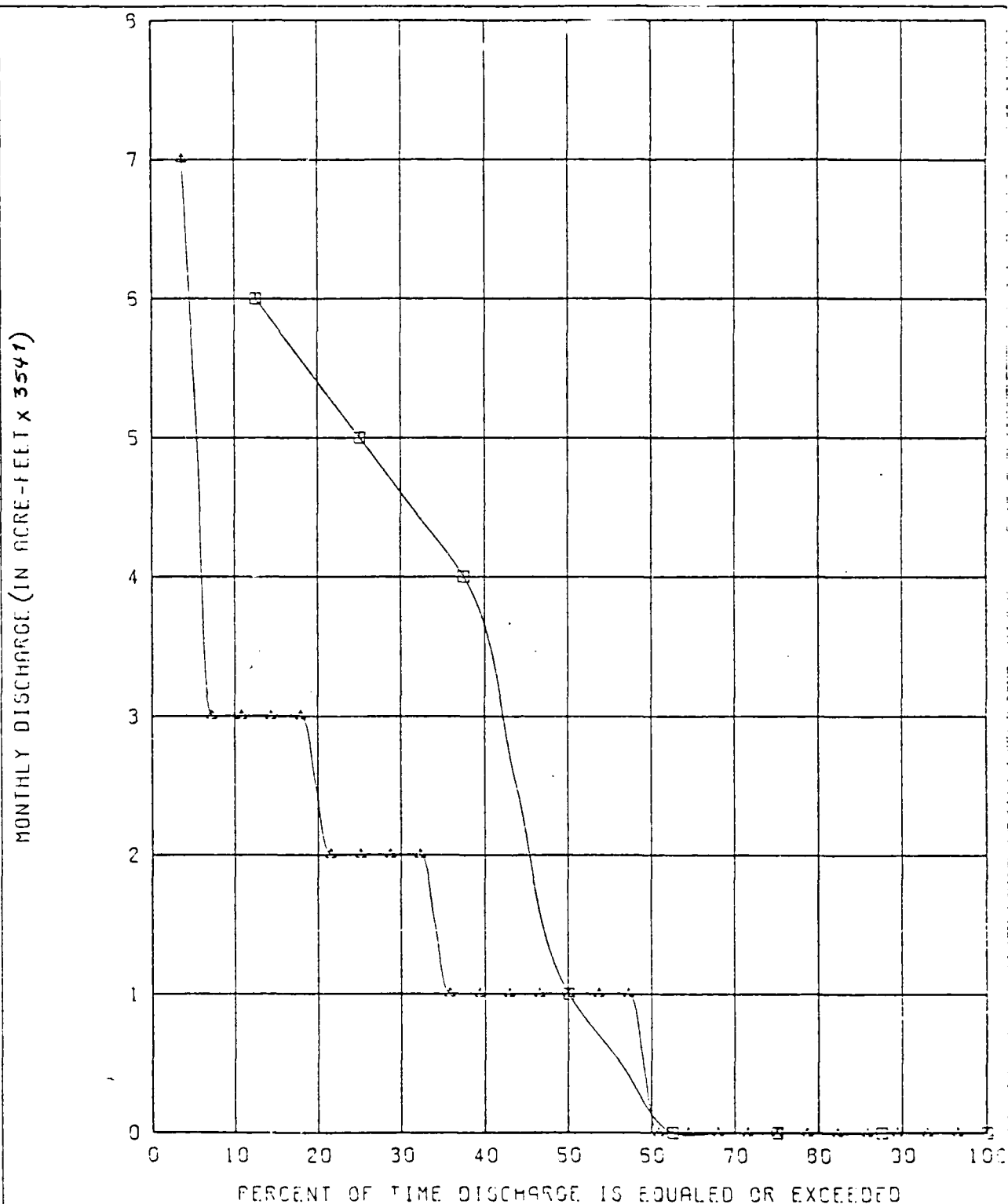
- — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1937-1941)
- ▲ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1942-1975)

BUFFALO BAYOU
ADDICKS RESERVOIR

FLOW DURATION CURVES AT DAM SITE
OCTOBER FLOWS

GALVESTON DISTRICT
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 22



LEGEND

—■— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1937-1944)

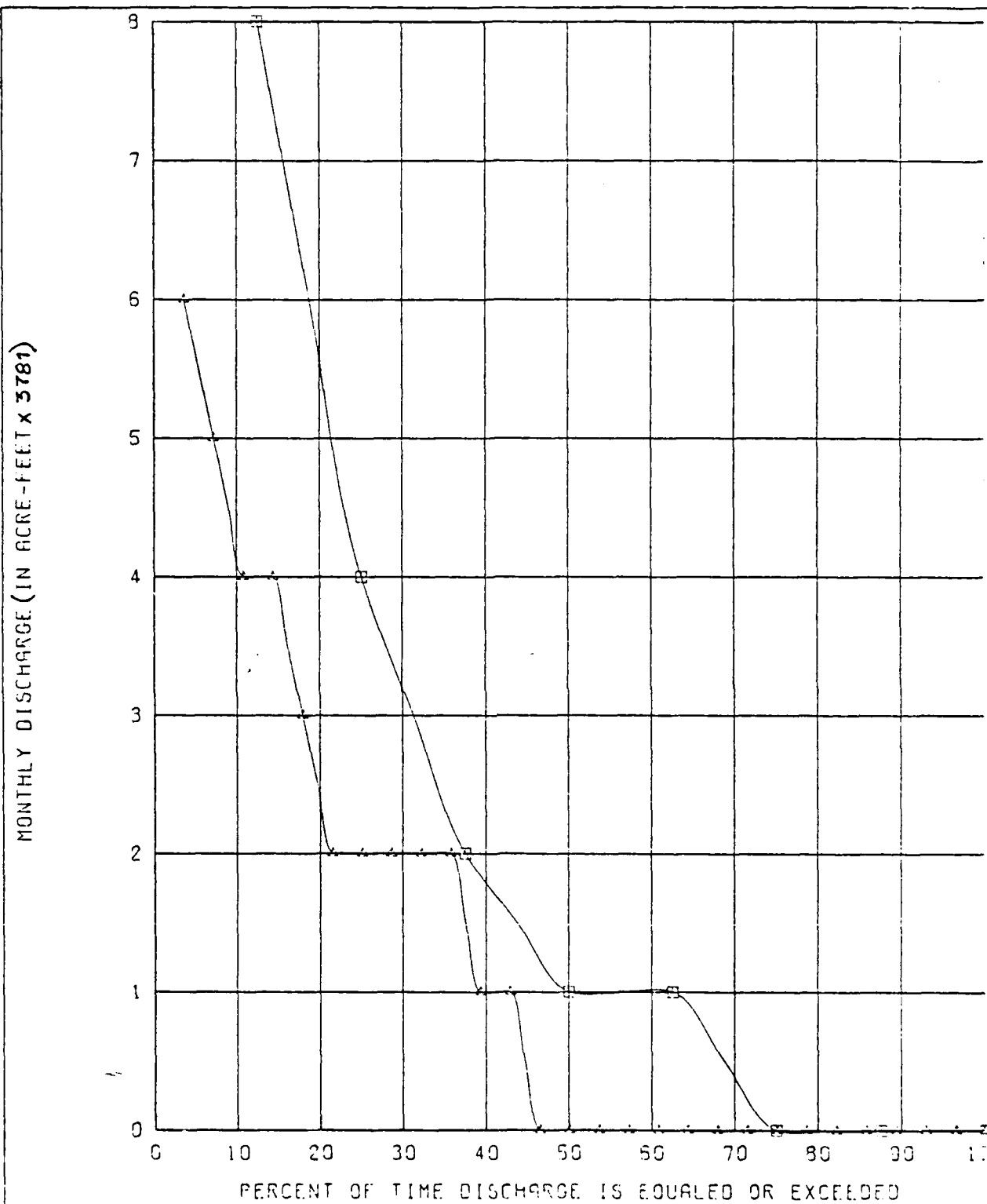
-x- POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1945-1975)

BUFFALO BAYOU
ADDICKS RESERVOIR

FLOW DURATION CURVES AT DAM SITE
NOVEMBER FLOWS

SALVESTON DISTRICT
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 23



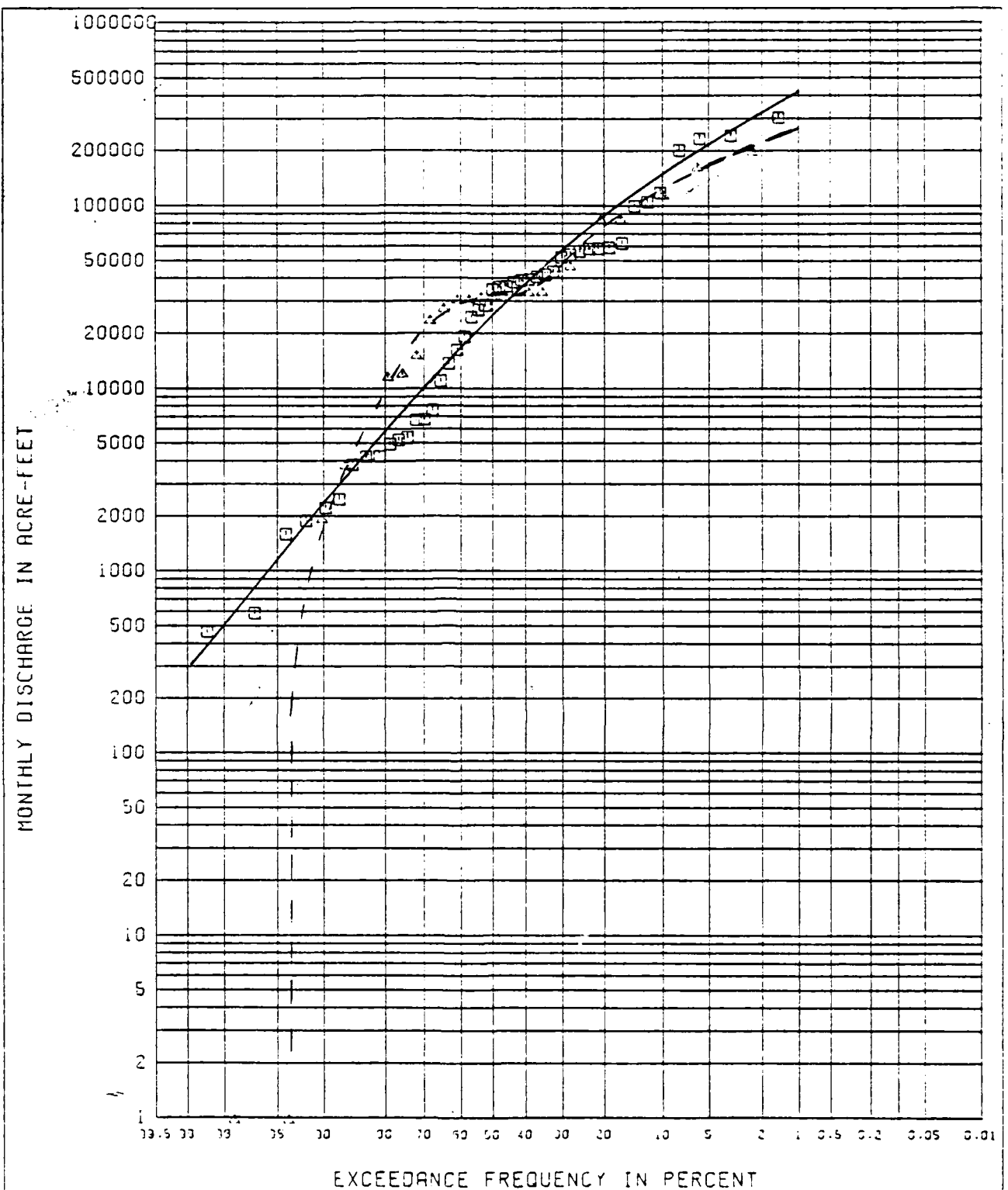
LEGEND

- PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1937-1944)
- △- POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1949-1975)

BUFFALO BAYOU
ADDICKS RESERVOIR

FLOW DURATION CURVES AT DAM SITE
DECEMBER FLOWS

GALVESTON DISTRICT
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1933-1943)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

BRAZOS RIVER BASIN, TEXAS

WHITNEY LAKE

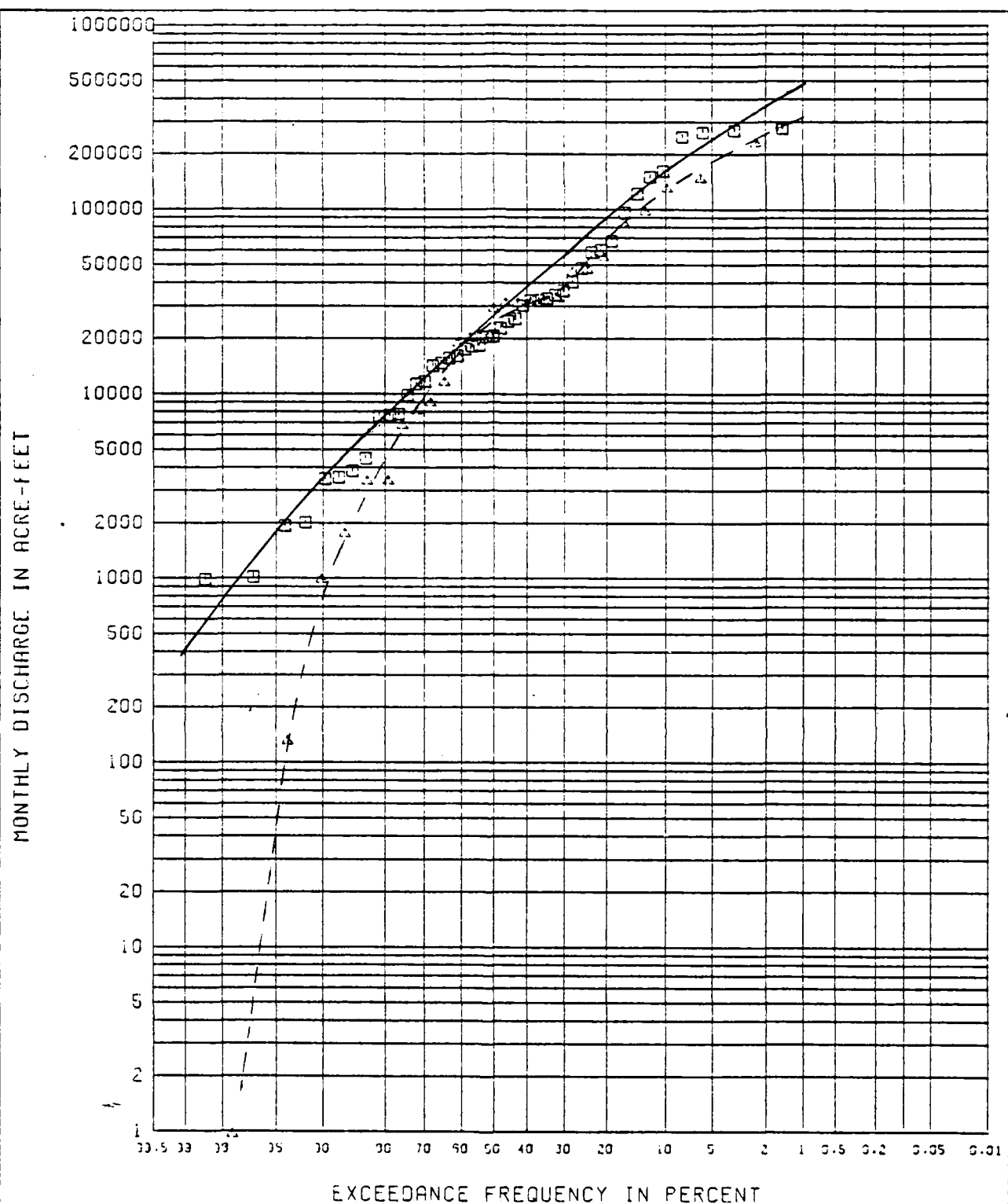
DISCHARGE-FREQUENCY RELATIONS

AT DAM SITE

JANUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 1



LEGEND

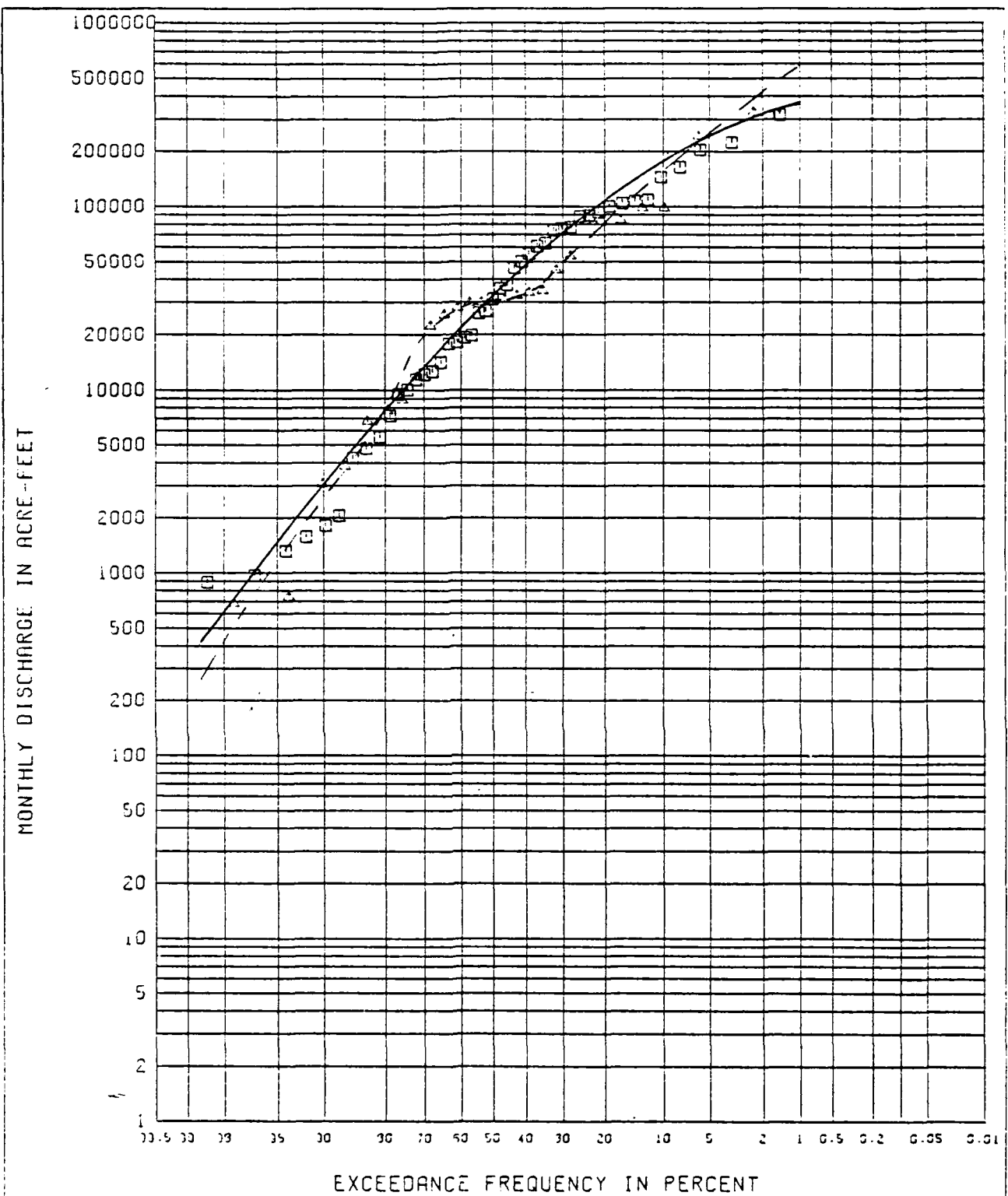
□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1939-1943)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

BRAZOS RIVER BASIN, TEXAS
WHITNEY LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
FEBRUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 2



LEGEND

□ — □ PRE-IMPONDMENT CONDITIONS
(PERIOD OF RECORD 1903-1943)

— — — POST-IMPONDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

BRAZOS RIVER BASIN, TEXAS

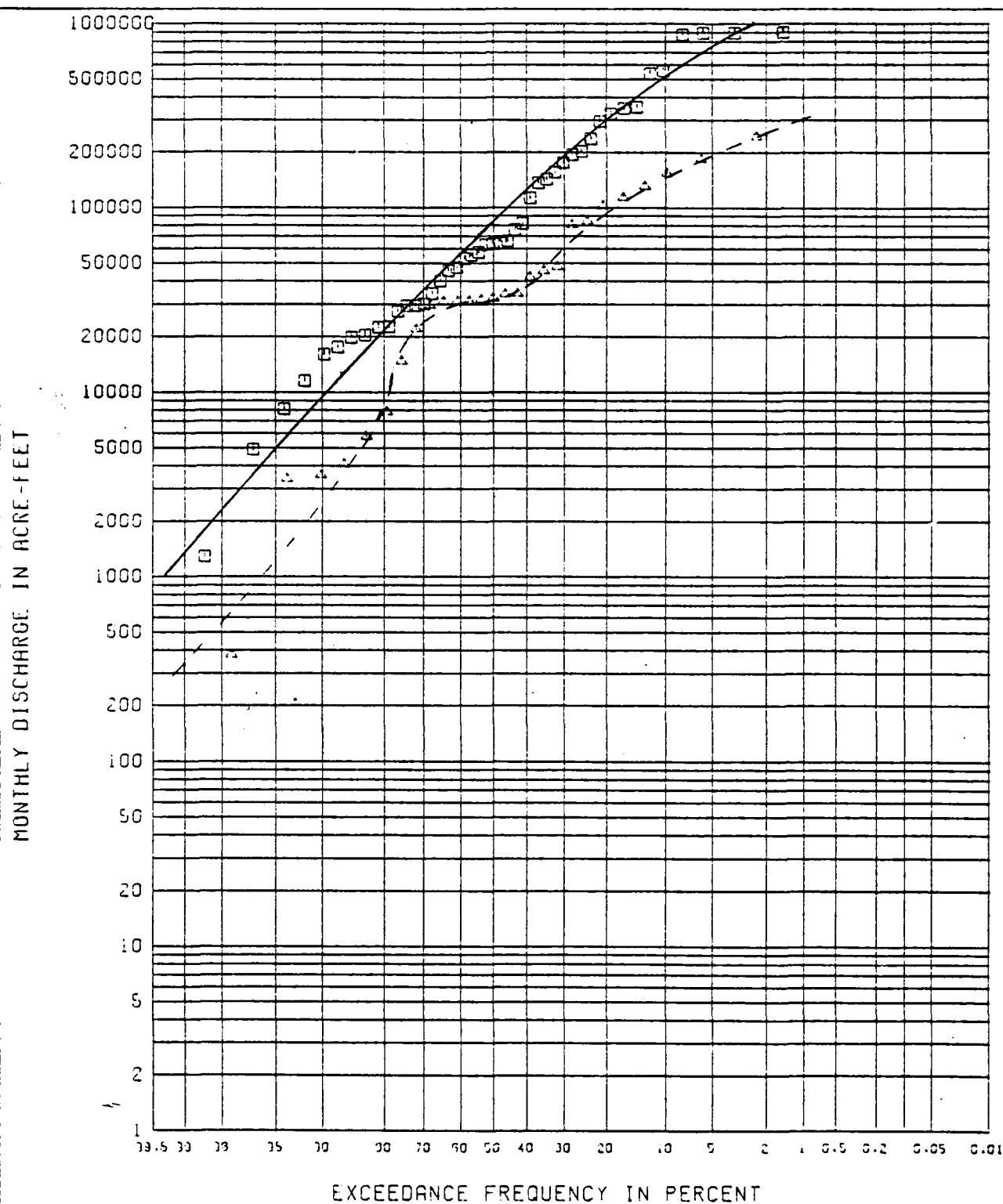
WHITNEY LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

MARCH FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 3



LEGEND

□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1933-1943)

△ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

BRAZOS RIVER BASIN, TEXAS

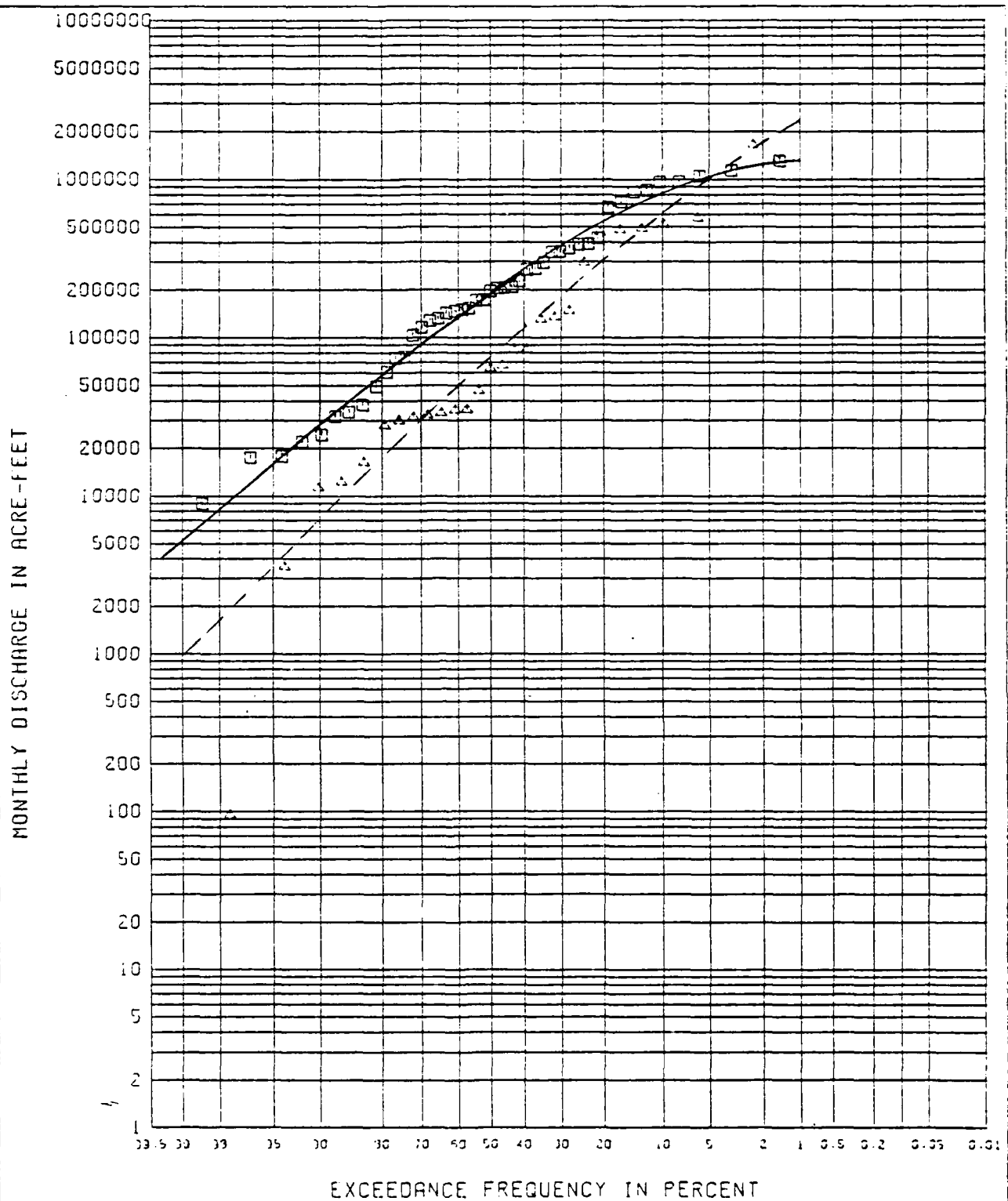
WHITNEY LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

APRIL FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 4



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1930-1943)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

BRAZOS RIVER BASIN, TEXAS

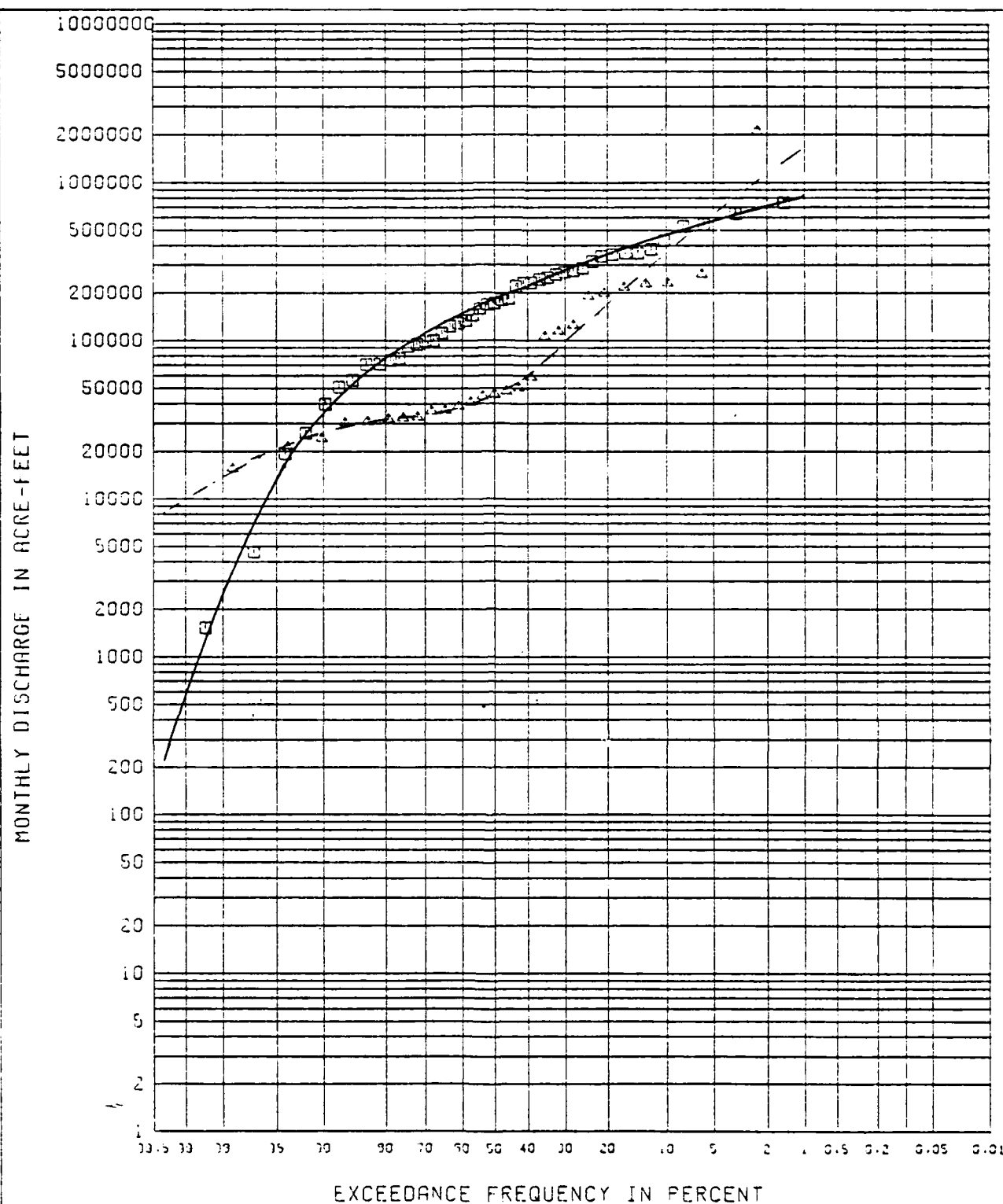
WHITNEY LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

MAY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 5



LEGEND

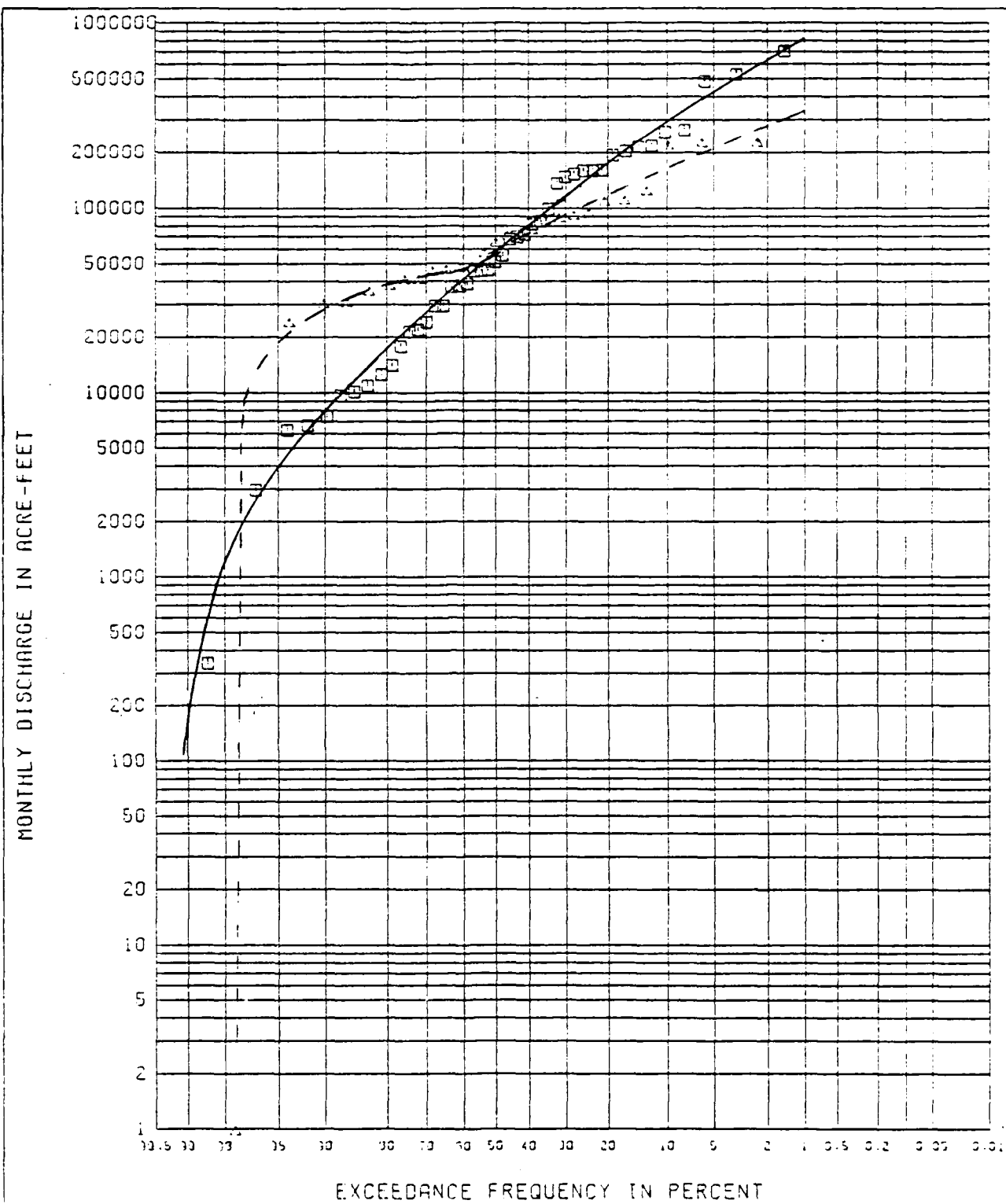
—□— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1939-1943)

—△— POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

BRAZOS RIVER BASIN, TEXAS
WHITNEY LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
JUNE FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 6



LEGEND

—□— PRE-IMPONDMENT CONDITIONS
(PERIOD OF RECORD 1939-1943)

-△- POST-IMPONDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

BRAZOS RIVER BASIN, TEXAS

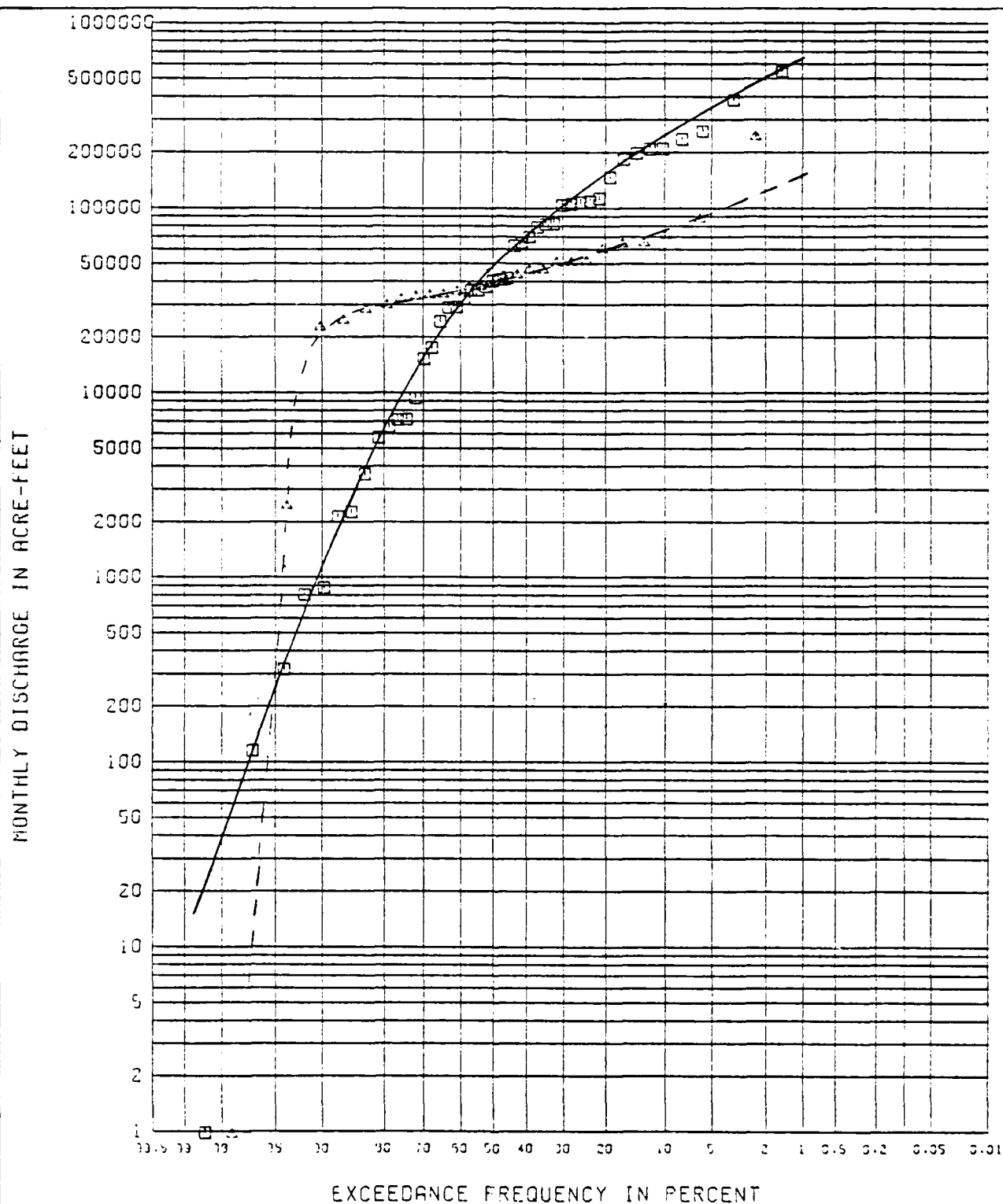
WHITNEY LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

JULY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 7



LEGEND

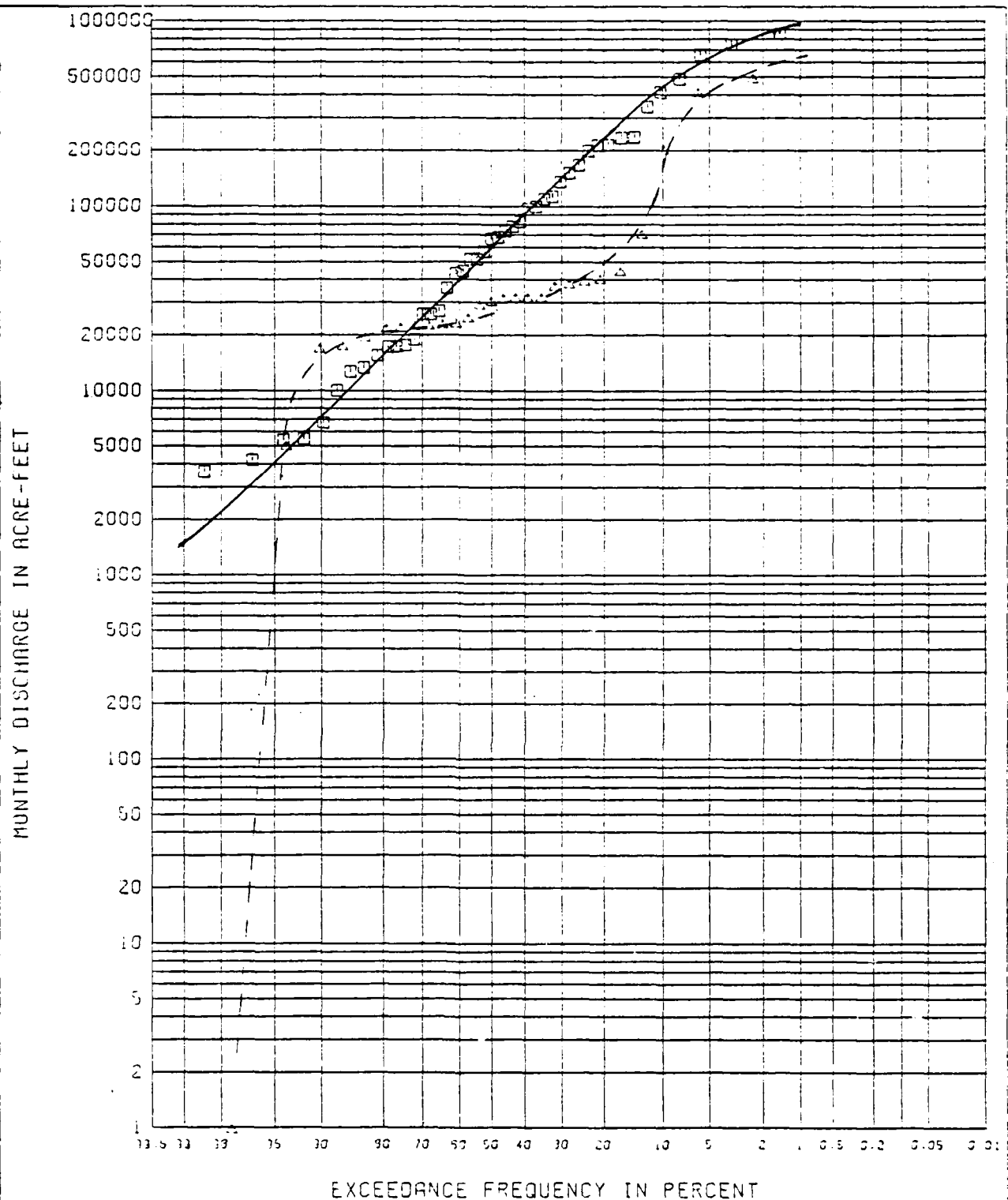
—■— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1939-1943)

-▲- POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

BRAZOS RIVER BASIN, TEXAS
WHITNEY LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
AUGUST FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 8



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1933-1943)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

BRAZOS RIVER BASIN, TEXAS

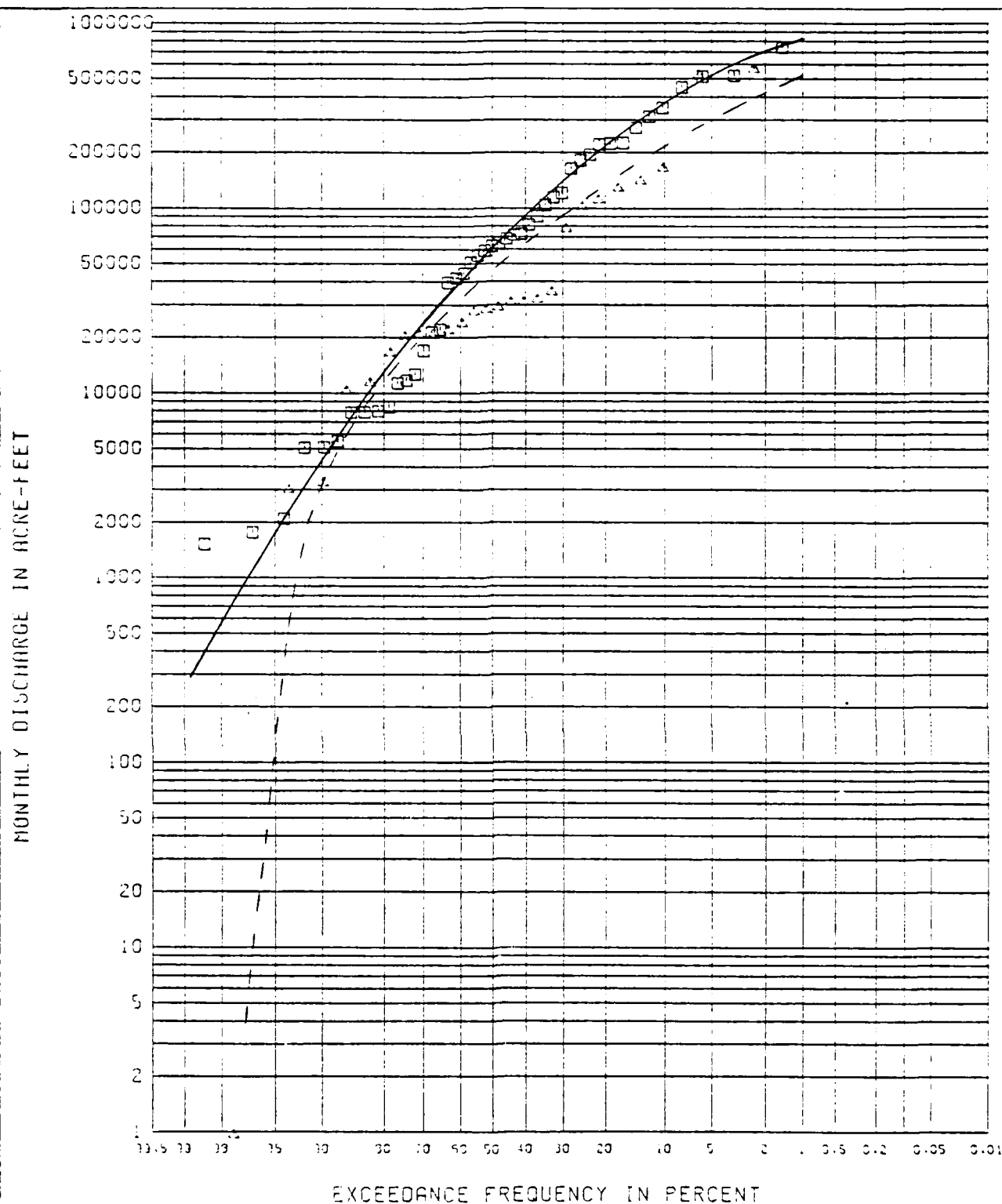
WHITNEY LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

SEPTEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 9



LEGEND

- — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1900-1943)
- △ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

BRAZOS RIVER BASIN, TEXAS

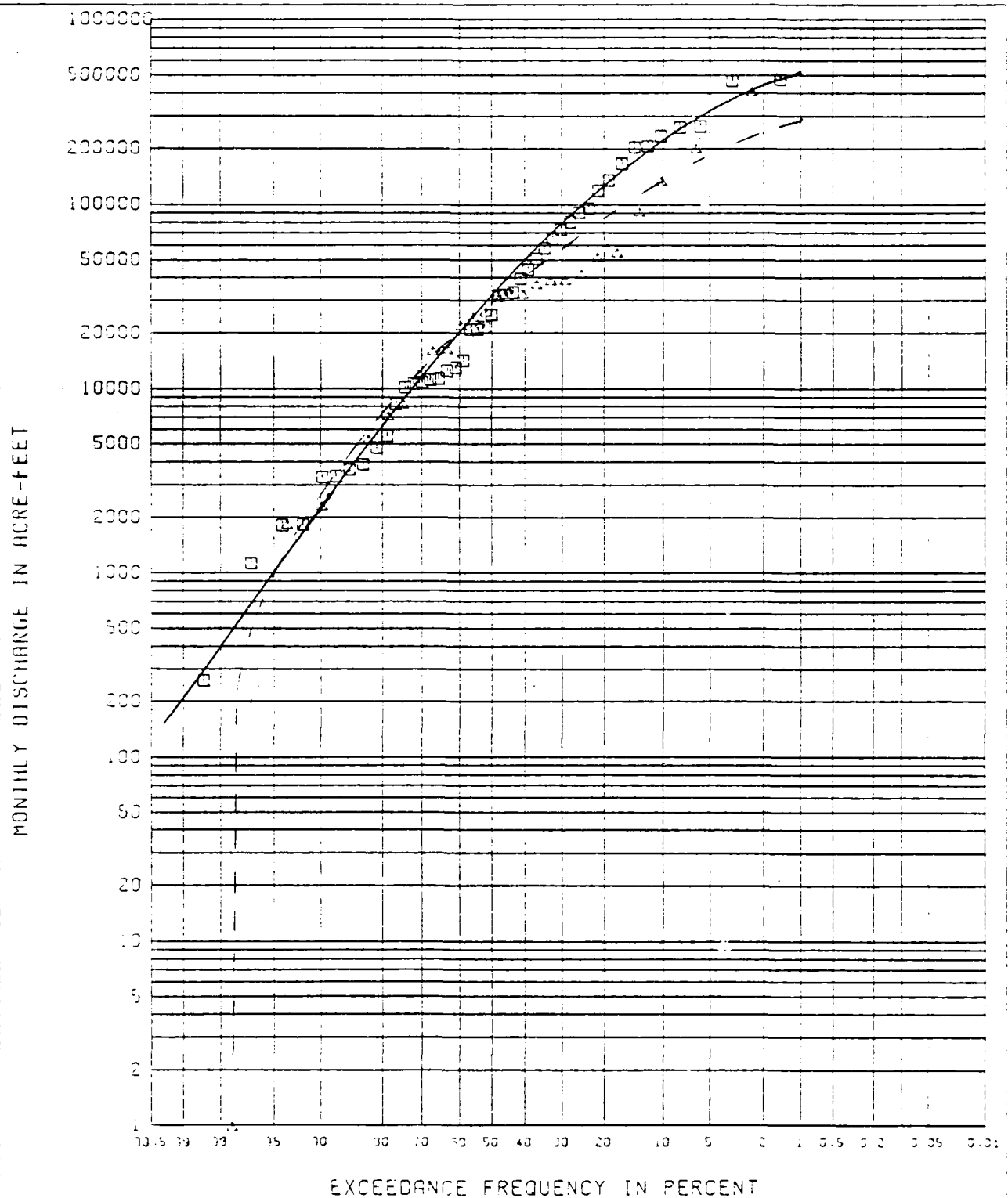
WHITNEY LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

OCTOBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 10



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1933-1943)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

SAZOS RIVER BASIN, TEXAS

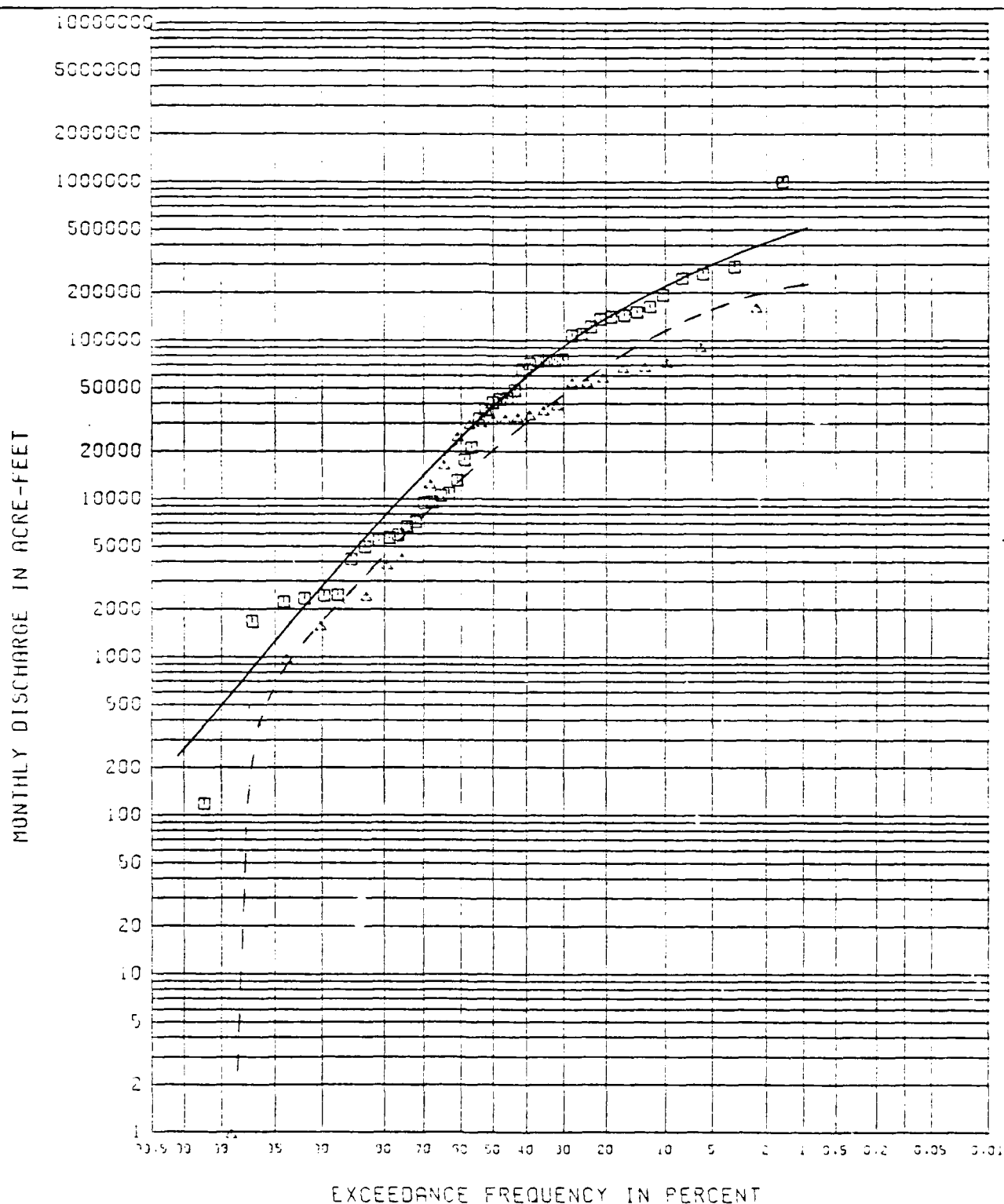
WHITNEY LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

NOVEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE II



LEGEND

- PRE-IMPOUNDMENT CONDITIONS
 (PERIOD OF RECORD 1909-1943)
- POST-IMPOUNDMENT CONDITIONS
 (PERIOD OF RECORD 1952-1973)

BRAZOS RIVER BASIN, TEXAS

WHITNEY LAKE

DISCHARGE-FREQUENCY RELATIONS
 AT DAM SITE
 DECEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
 TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
 EVALUATION REPORT OF DECEMBER 1990

PLATE 12

AD-A156 497

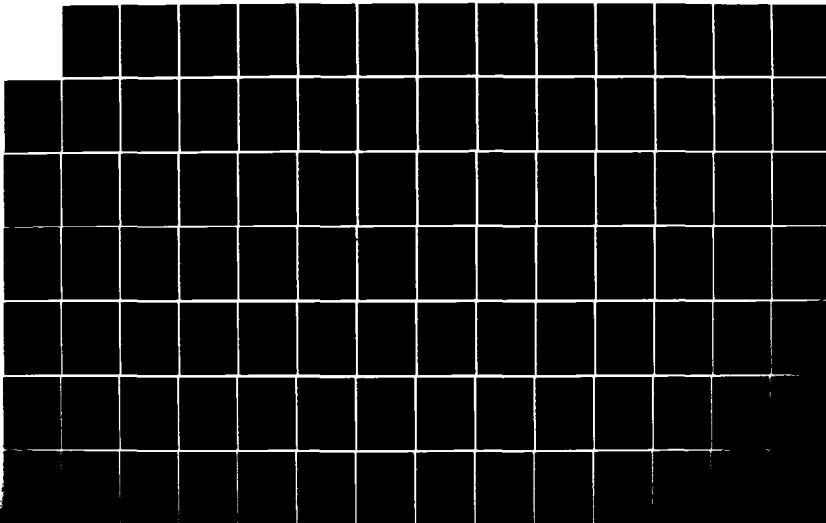
RESERVOIR CONTROL CENTER: ACTIVITIES AND
ACCOMPLISHMENTS OF THE SOUTHWEST. (U) CORPS OF
ENGINEERS DALLAS TX SOUTHWESTERN DIV JAN 81

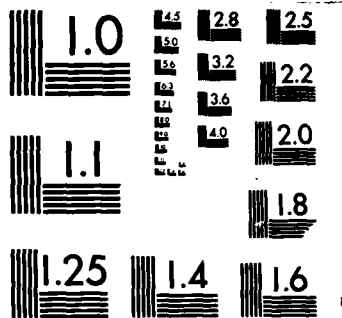
5/7

UNCLASSIFIED

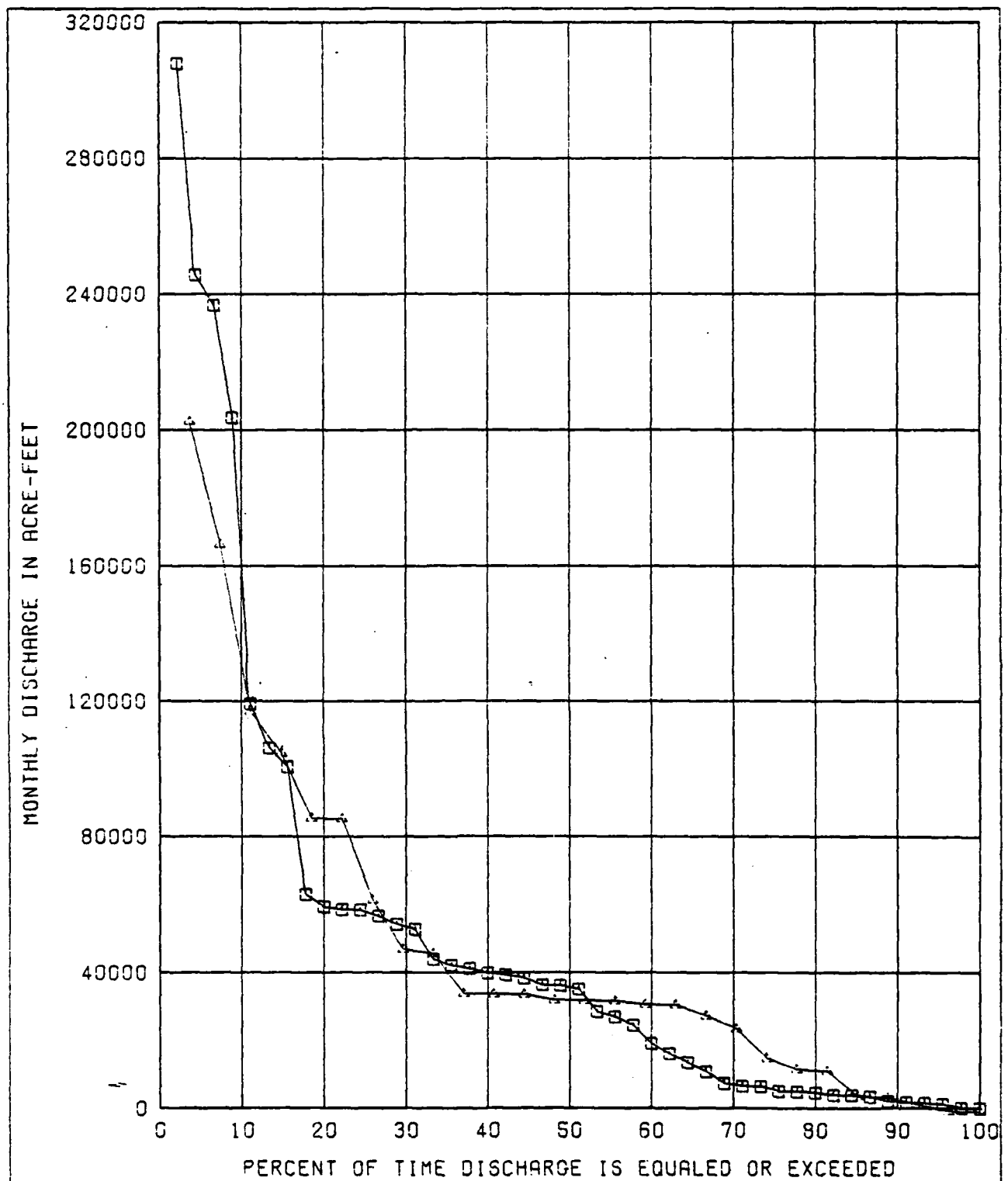
F/G 13/2

NL





MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A



LEGEND

□ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1899-1943)

△ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1978)

BRAZOS RIVER BASIN, TEXAS

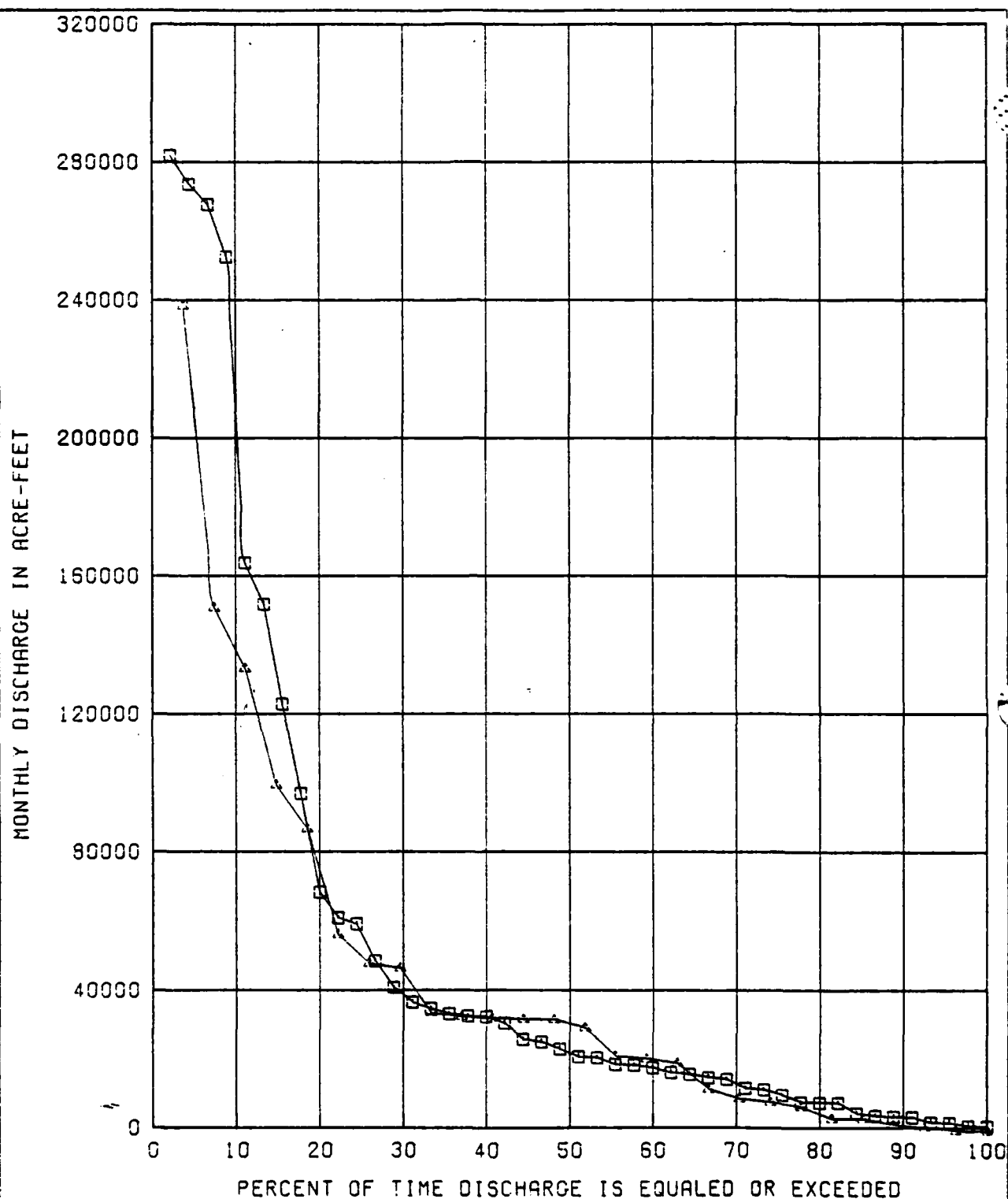
WHITNEY LAKE

FLOW DURATION CURVES AT DAM SITE

JANUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 13



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1939-1943)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

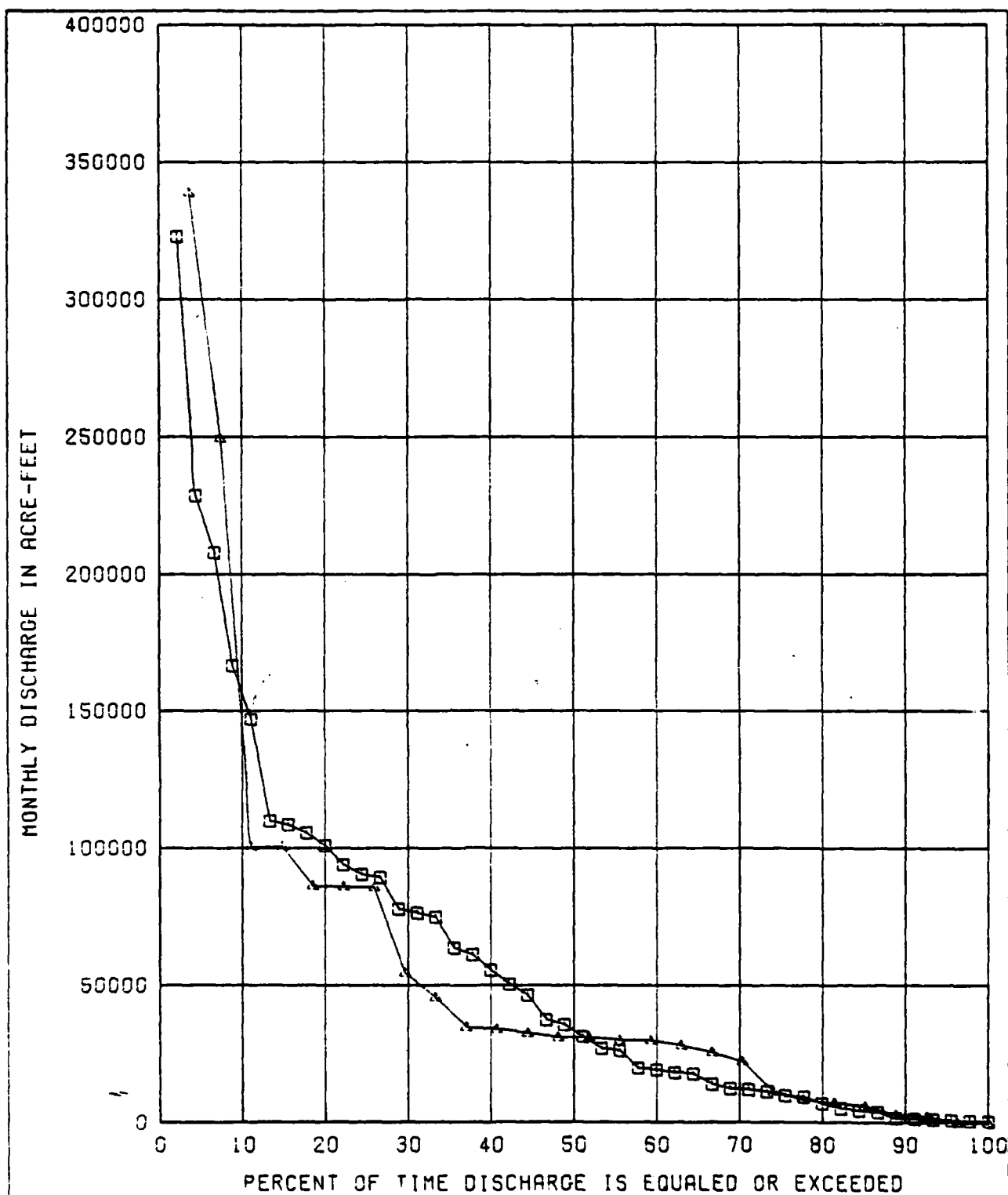
BRAZOS RIVER BASIN, TEXAS

WHITNEY LAKE

FLOW DURATION CURVES AT DAM SITE
FEBRUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 14



LEGEND

□ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1909-1943)

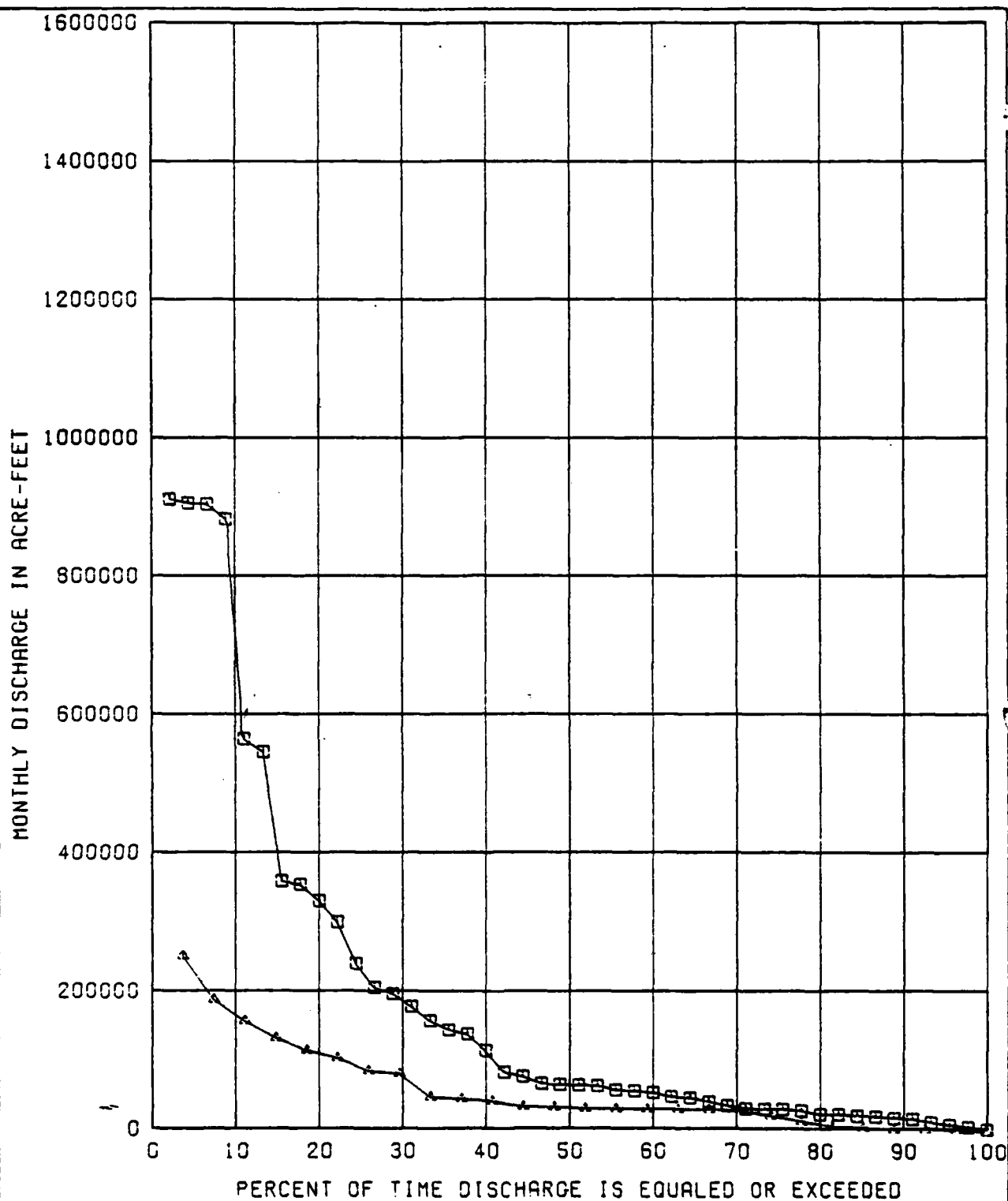
△ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

BRAZOS RIVER BASIN, TEXAS
WHITNEY LAKE

FLOW DURATION CURVES AT DAM SITE
MARCH FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 15



LEGEND

□ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1909-1943)

▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

BRAZOS RIVER BASIN, TEXAS

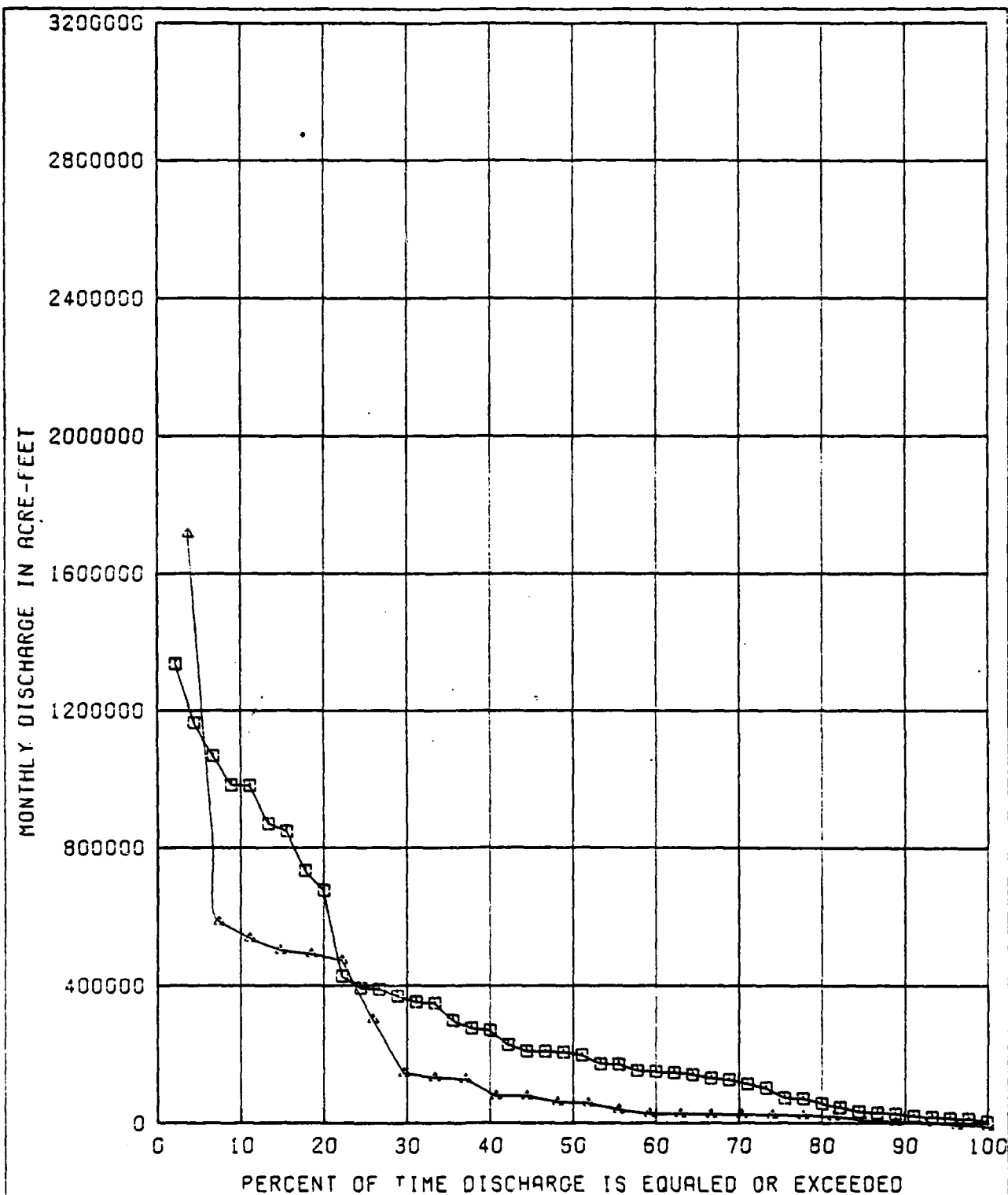
WHITNEY LAKE

FLOW DURATION CURVES AT DAM SITE

APRIL FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 16



LEGEND

□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1939-1943)

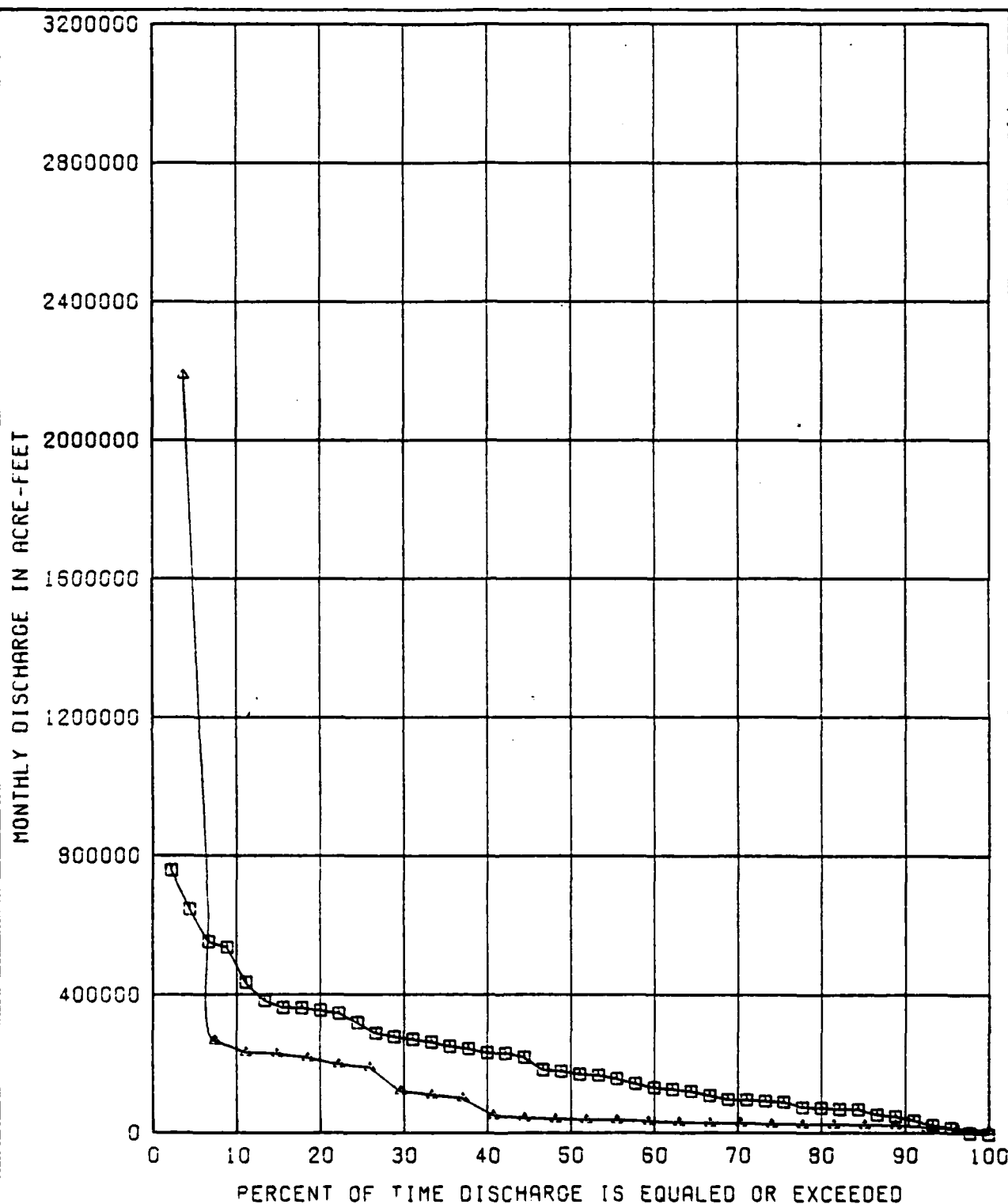
▲ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

BRAZOS RIVER BASIN, TEXAS
WHITNEY LAKE

FLOW DURATION CURVES AT DAM SITE
MAY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 17



LEGEND

□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1939-1943)

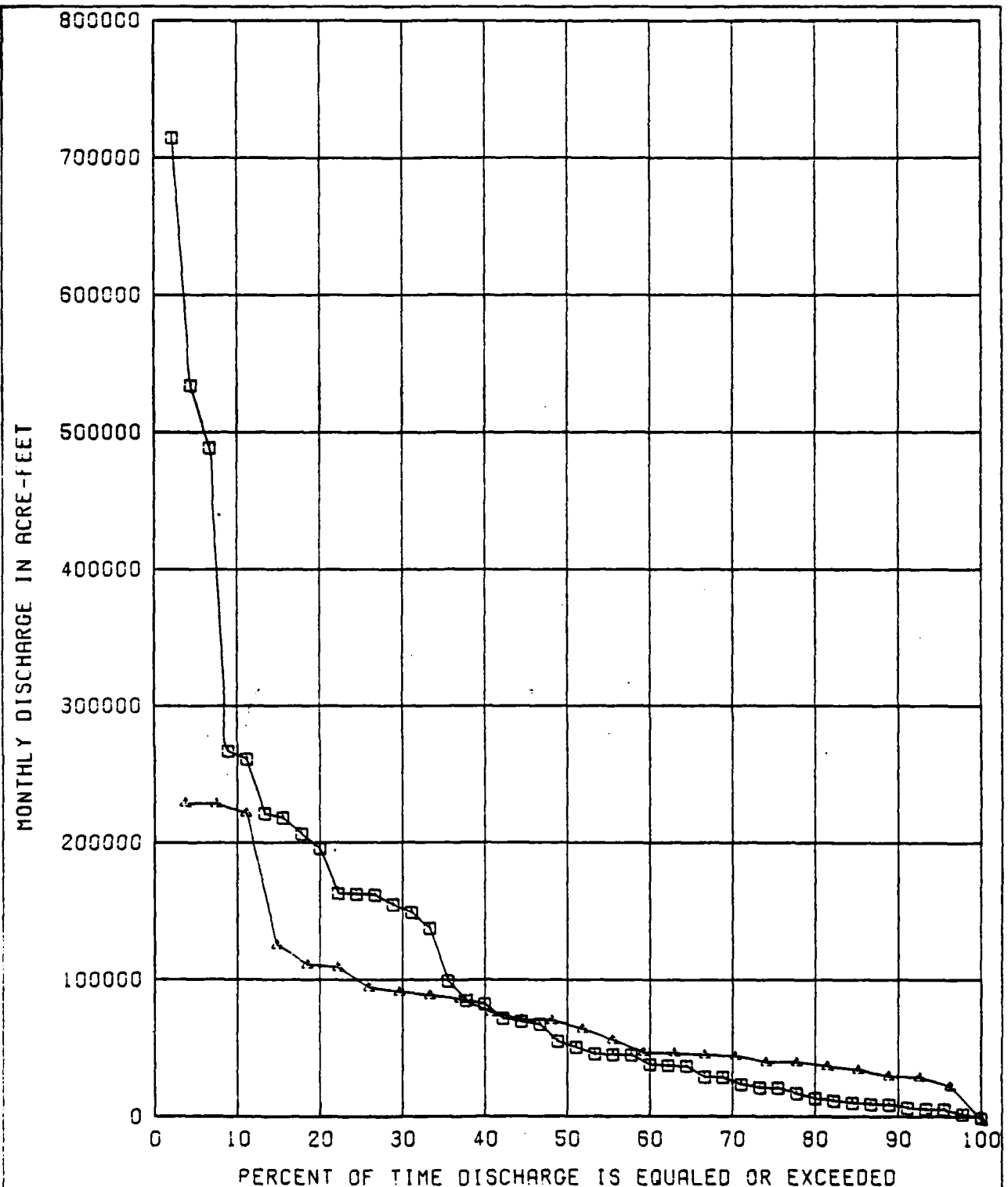
▲ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

SRAZOS RIVER BASIN, TEXAS
WHITNEY LAKE

FLOW DURATION CURVES AT DAM SITE
JUNE FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 18



LEGEND

□ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1939-1943)

△ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

BRAZOS RIVER BASIN, TEXAS

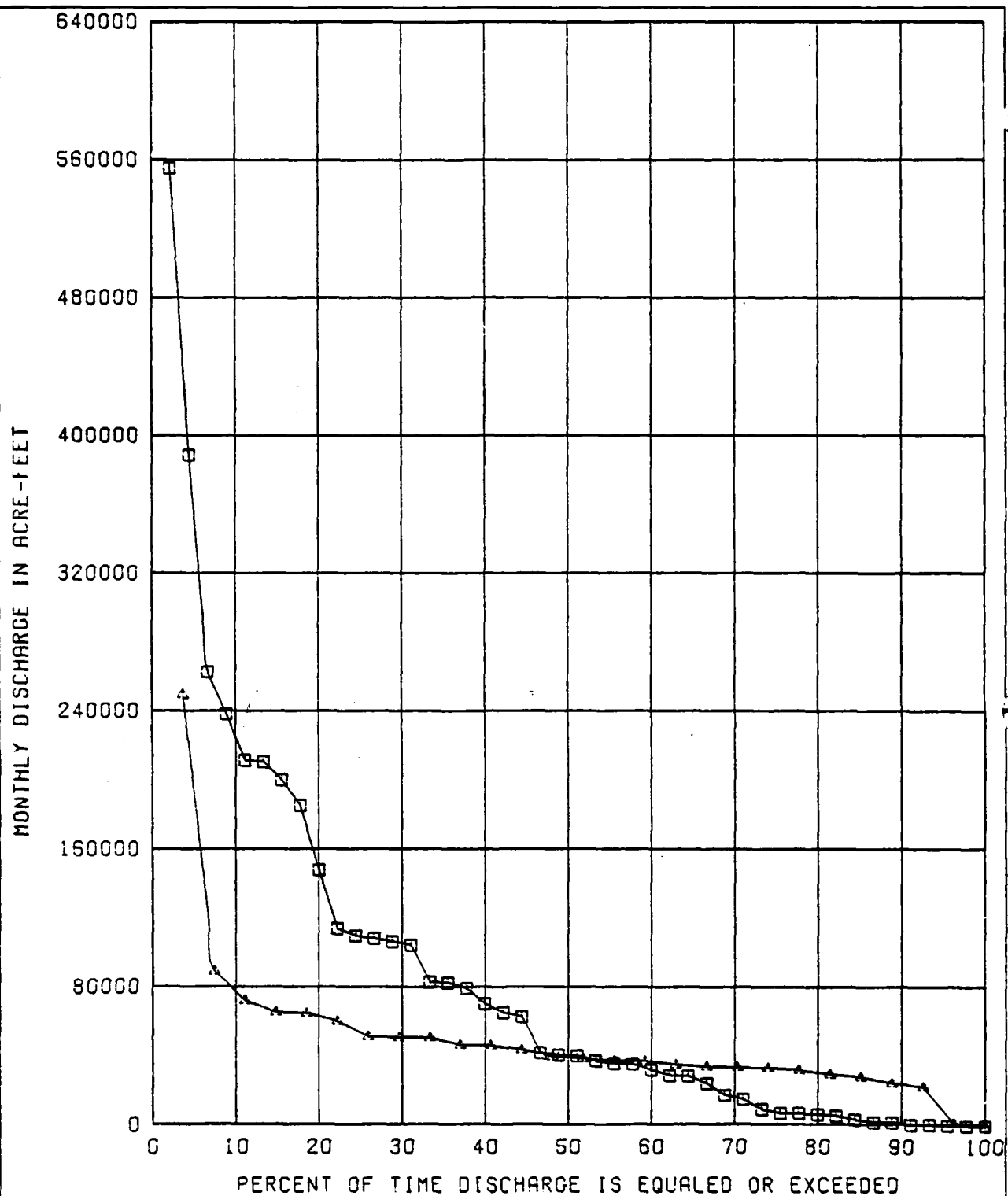
WHITNEY LAKE

FLOW DURATION CURVES AT DAM SITE

JULY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1950

PLATE 19



LEGEND

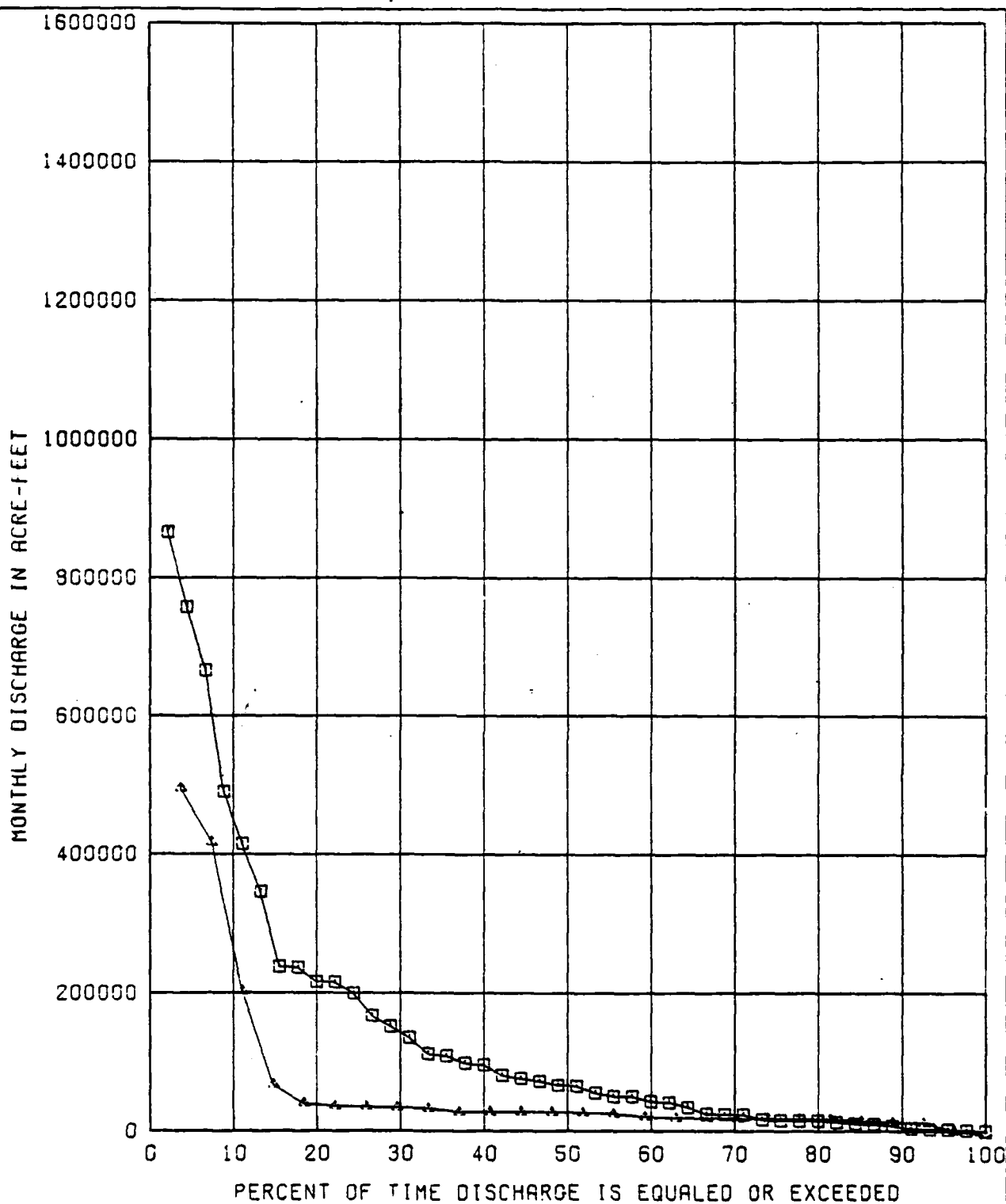
- PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1932-1943)
- △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

BRAZOS RIVER BASIN, TEXAS
WHITNEY LAKE

FLOW DURATION CURVES AT DAM SITE
AUGUST FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 20



LEGEND

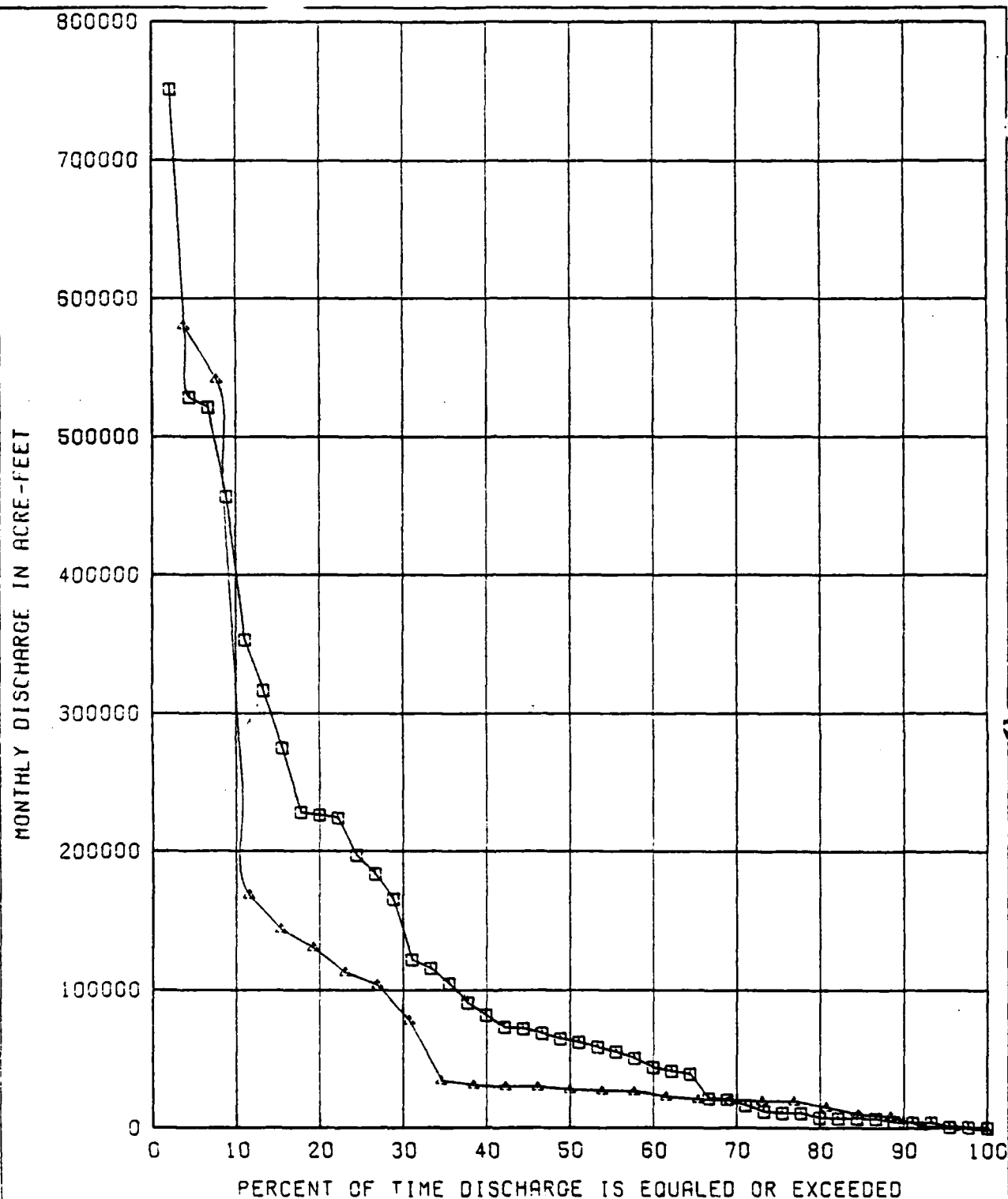
- PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1939-1943)
- △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

BRAZOS RIVER BASIN, TEXAS
WHITNEY LAKE

FLOW DURATION CURVES AT DAM SITE
SEPTEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 21



LEGEND

□ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1909-1943)

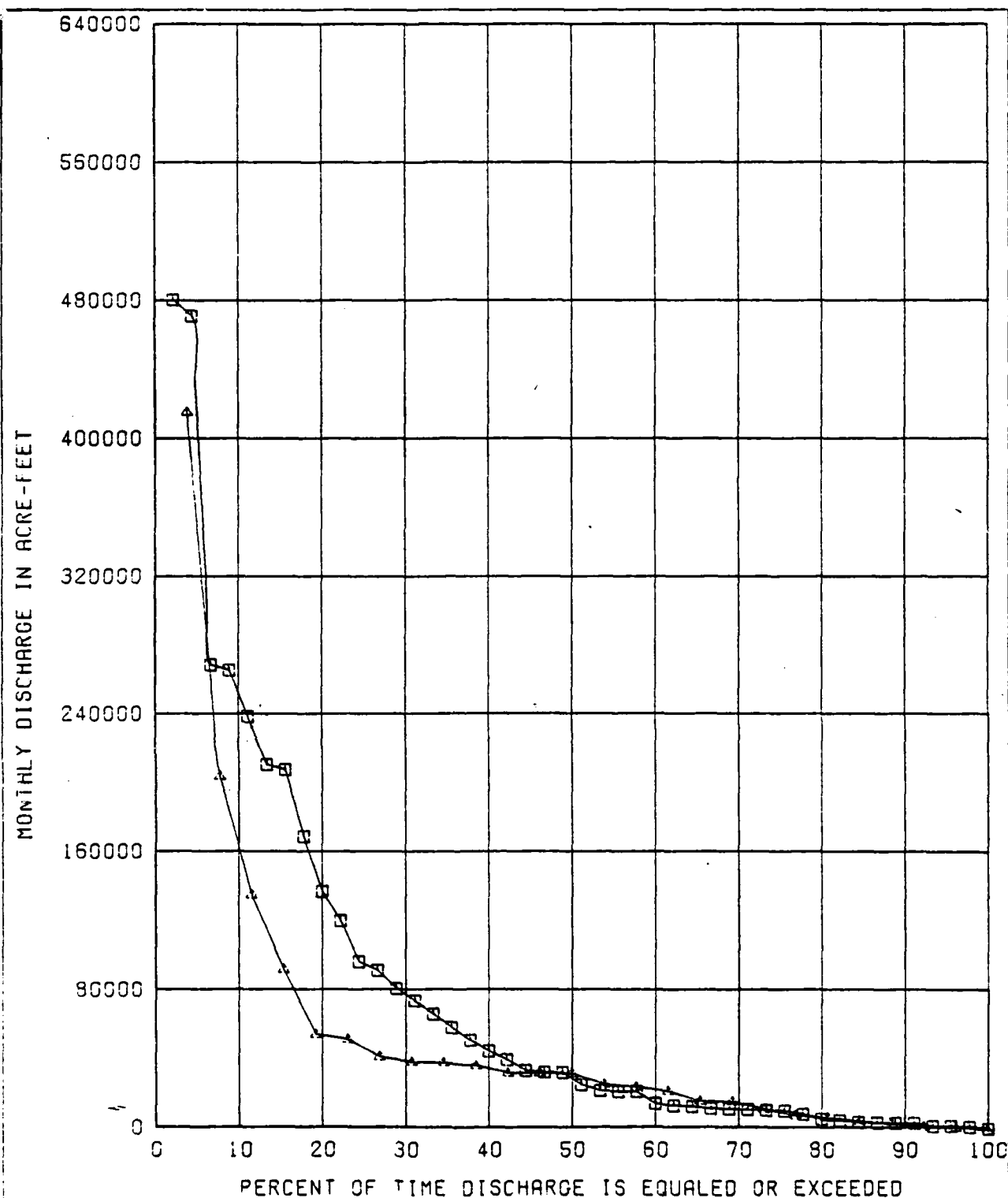
▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

BRAZOS RIVER BASIN, TEXAS
WHITNEY LAKE

FLOW DURATION CURVES AT DAM SITE
OCTOBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1950

PLATE 22



LEGEND

□ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1933-1943)

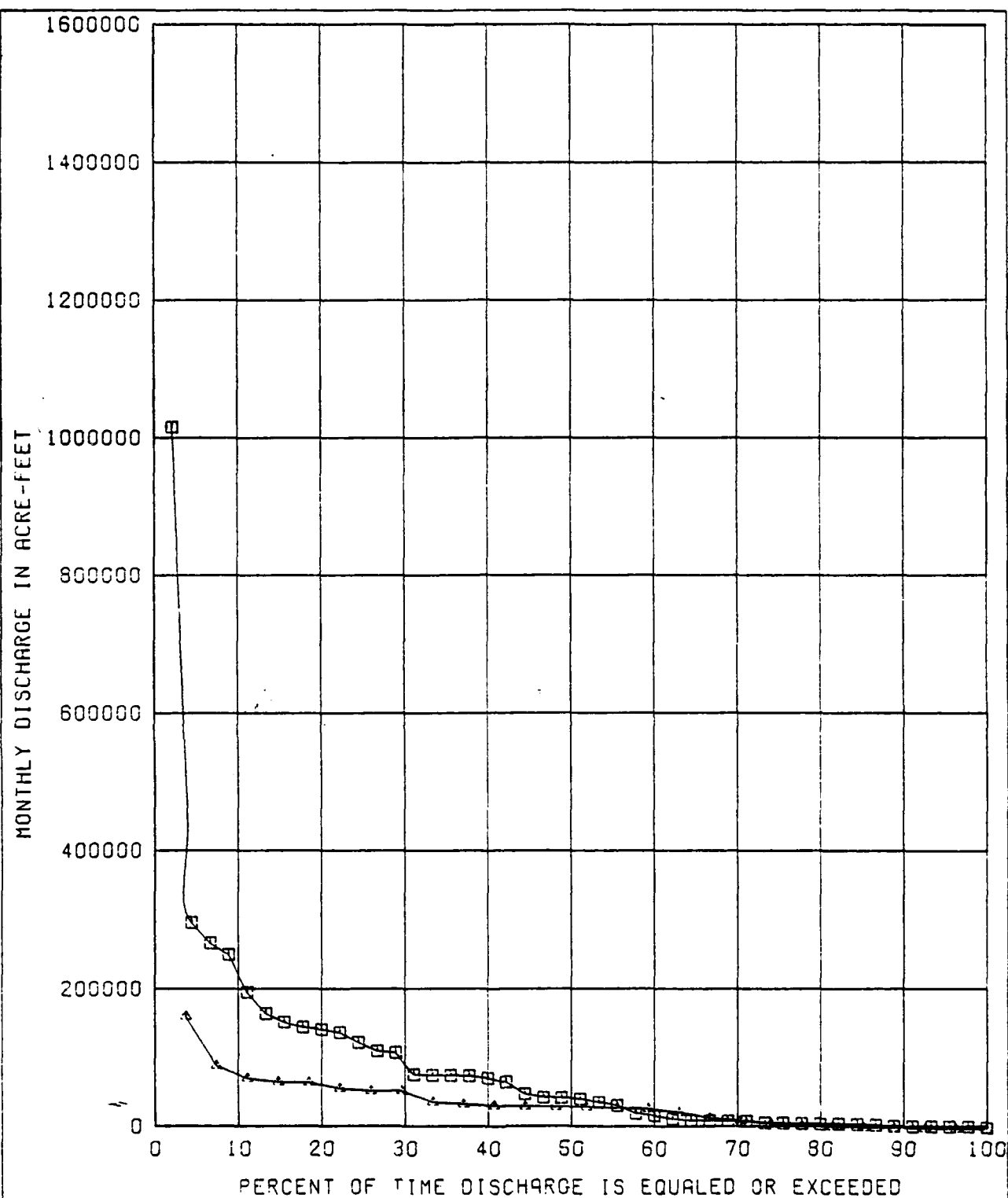
△ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

BRAZOS RIVER BASIN, TEXAS
WHITNEY LAKE

FLOW DURATION CURVES AT DAM SITE
NOVEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 23



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1909-1943)

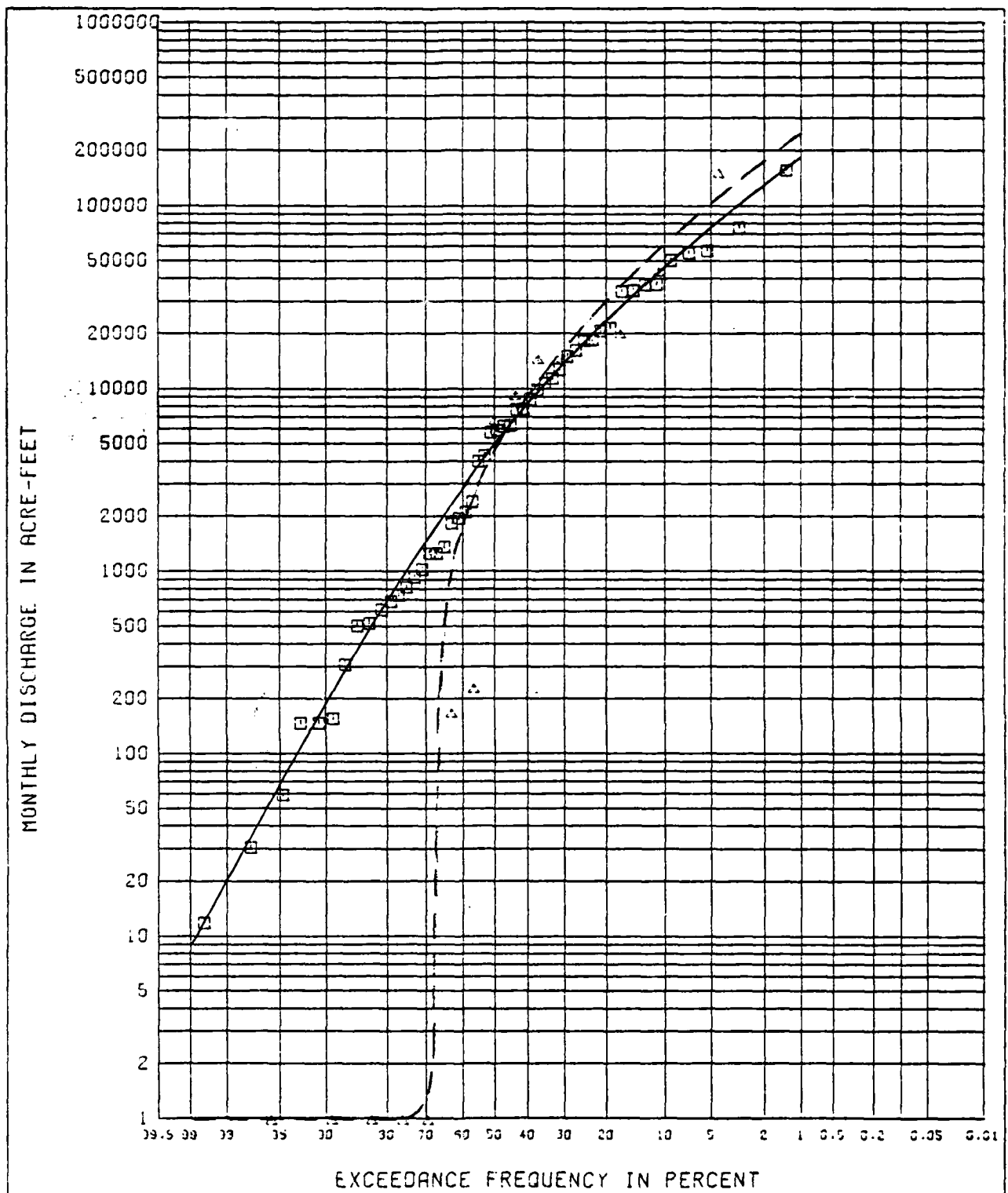
△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

BRAZOS RIVER BASIN, TEXAS
WHITNEY LAKE

FLOW DURATION CURVES AT DAM SITE
DECEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 24



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1907-1959)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1963-1979)

BRAZOS RIVER BASIN, TEXAS

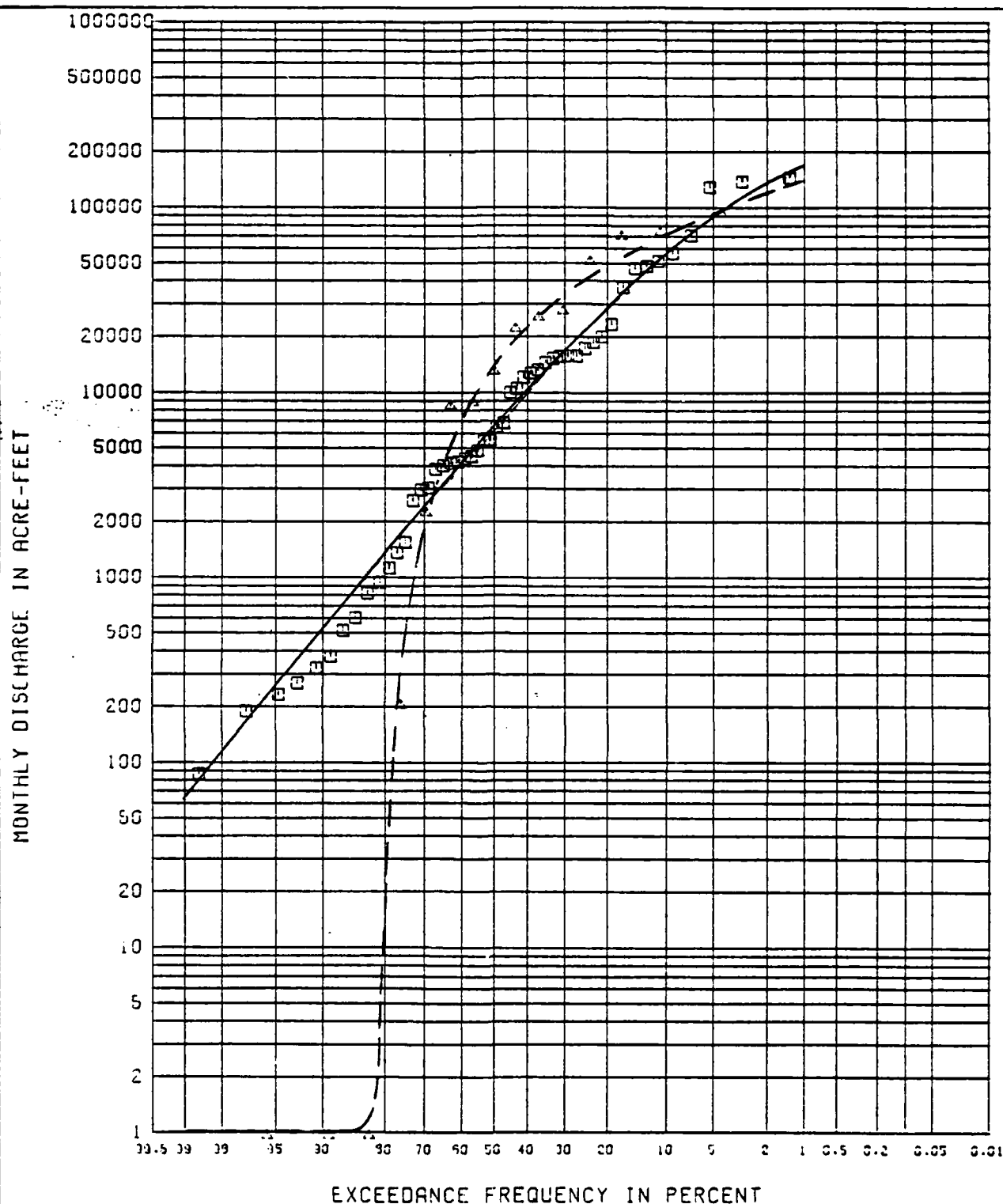
WACO LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

JANUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE I



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1907-1955)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1963-1979)

BRAZOS RIVER BASIN, TEXAS

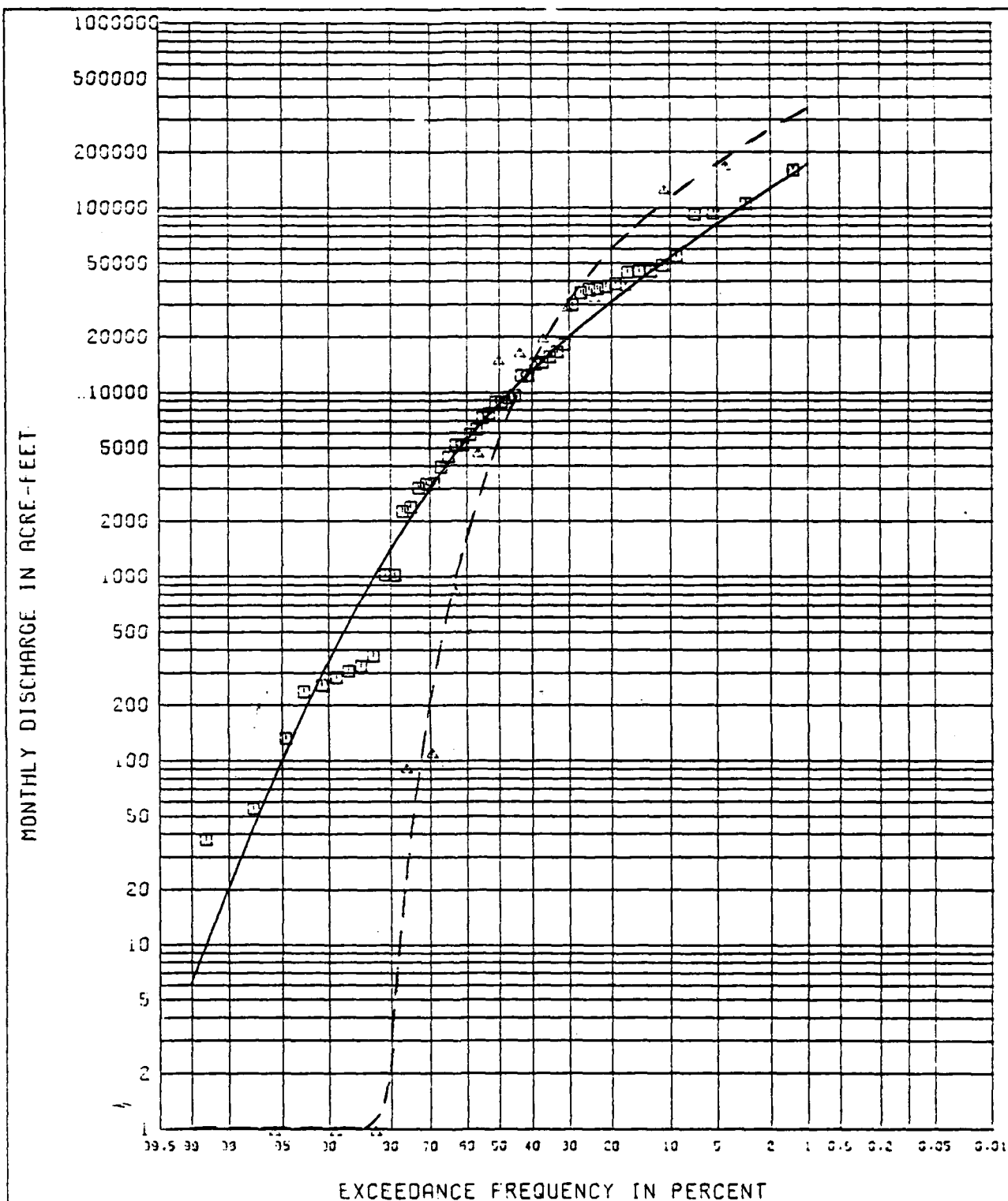
WACO LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

FEBRUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 2



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1907-1959)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1963-1979)

BRAZOS RIVER BASIN, TEXAS

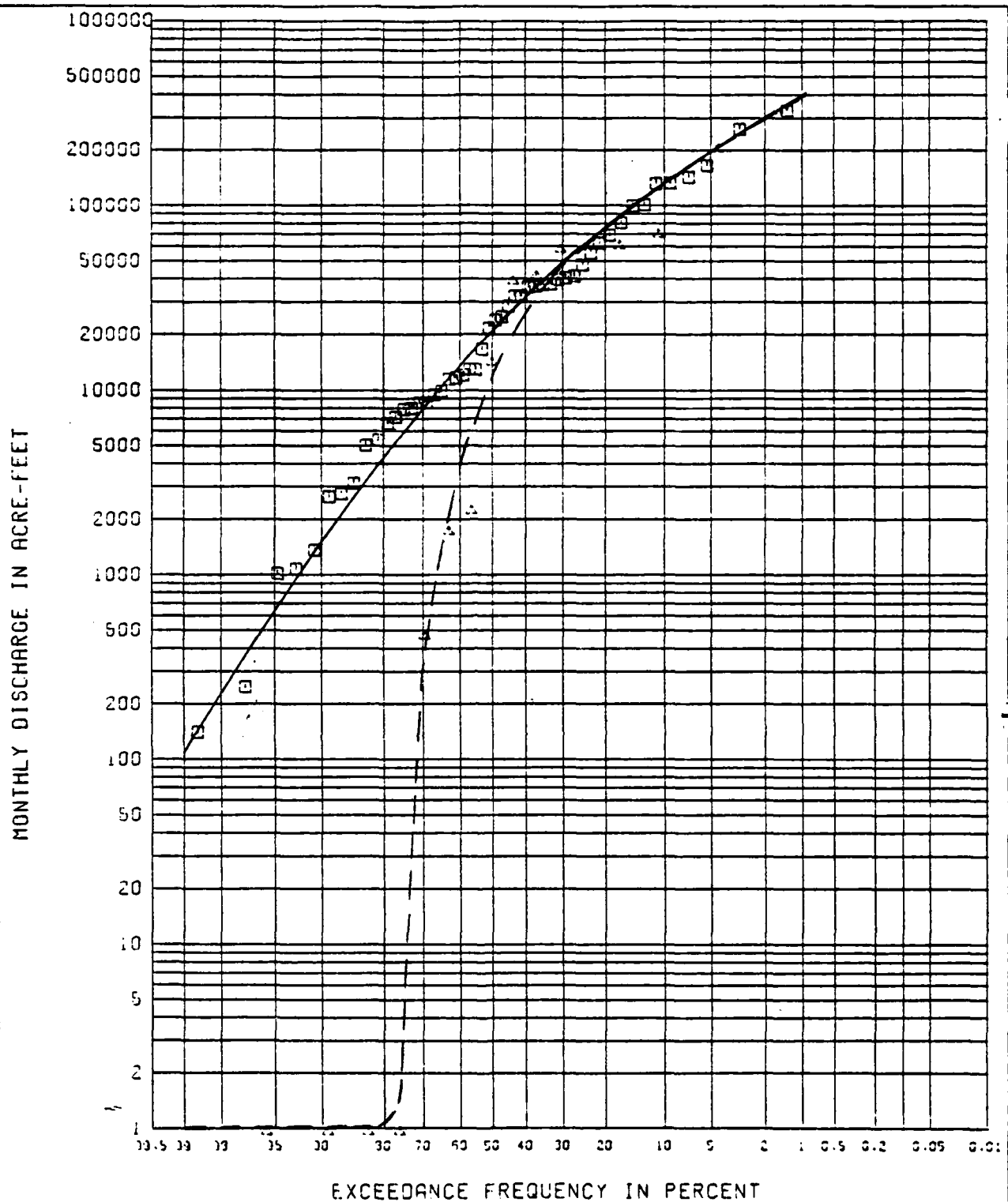
WACO LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

MARCH FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 3



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1907-1956)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1963-1979)

BRAZOS RIVER BASIN, TEXAS

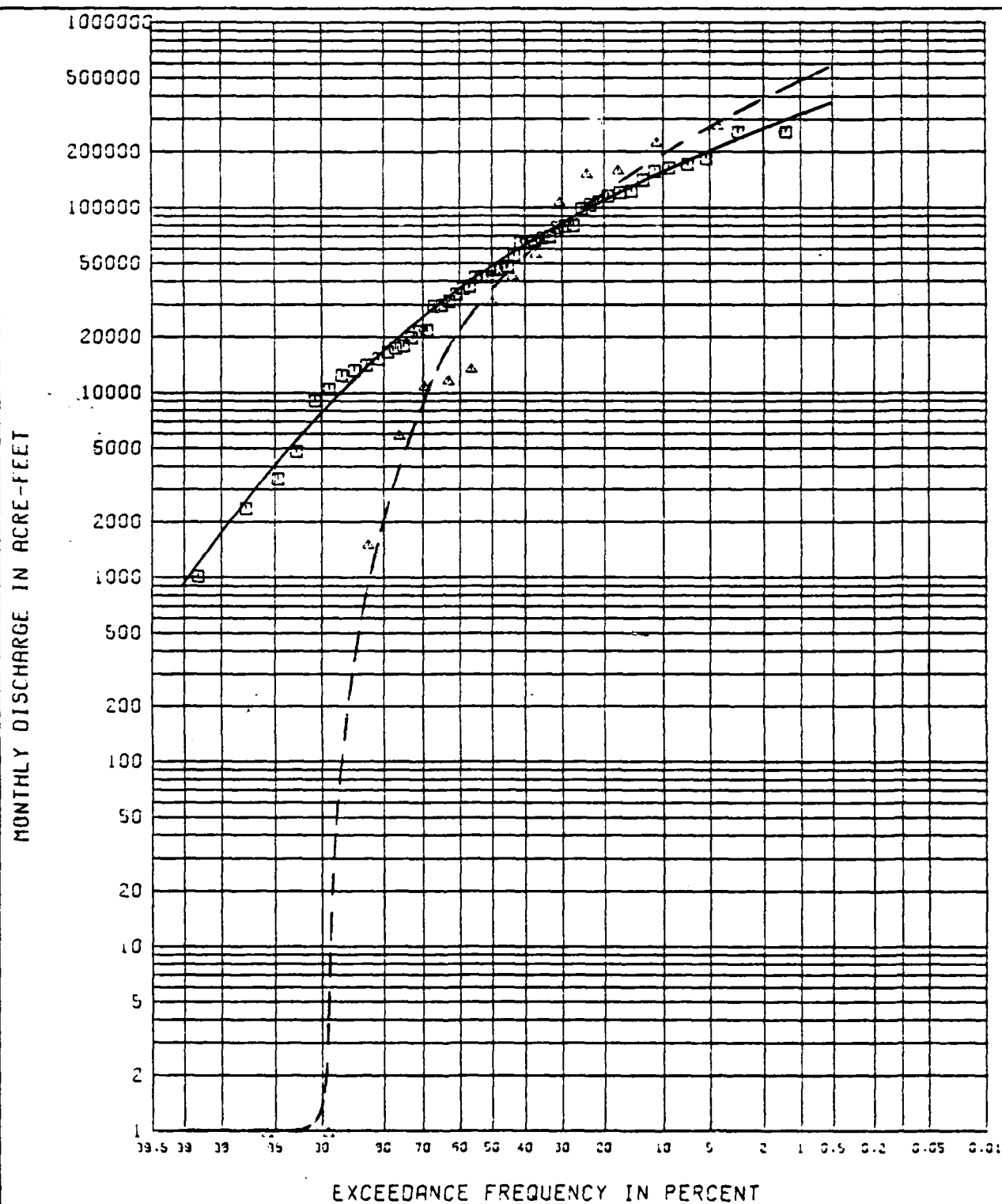
WACO LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

APRIL FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 4



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1907-1955)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1963-1979)

BRAZOS RIVER BASIN, TEXAS

WACO LAKE

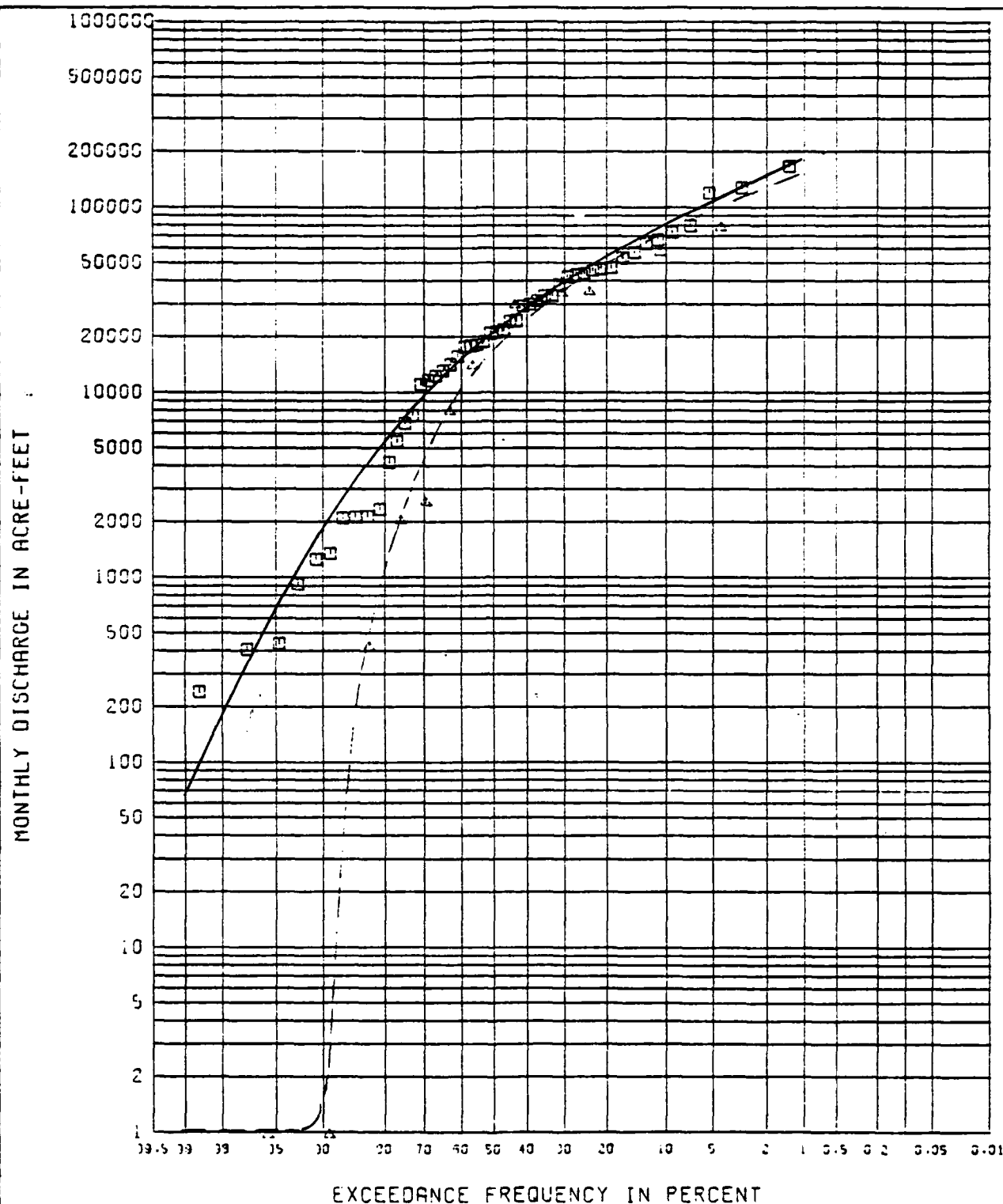
DISCHARGE-FREQUENCY RELATIONS

AT DAM SITE

MAY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 5



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1907-1955)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

BRAZOS RIVER BASIN, TEXAS

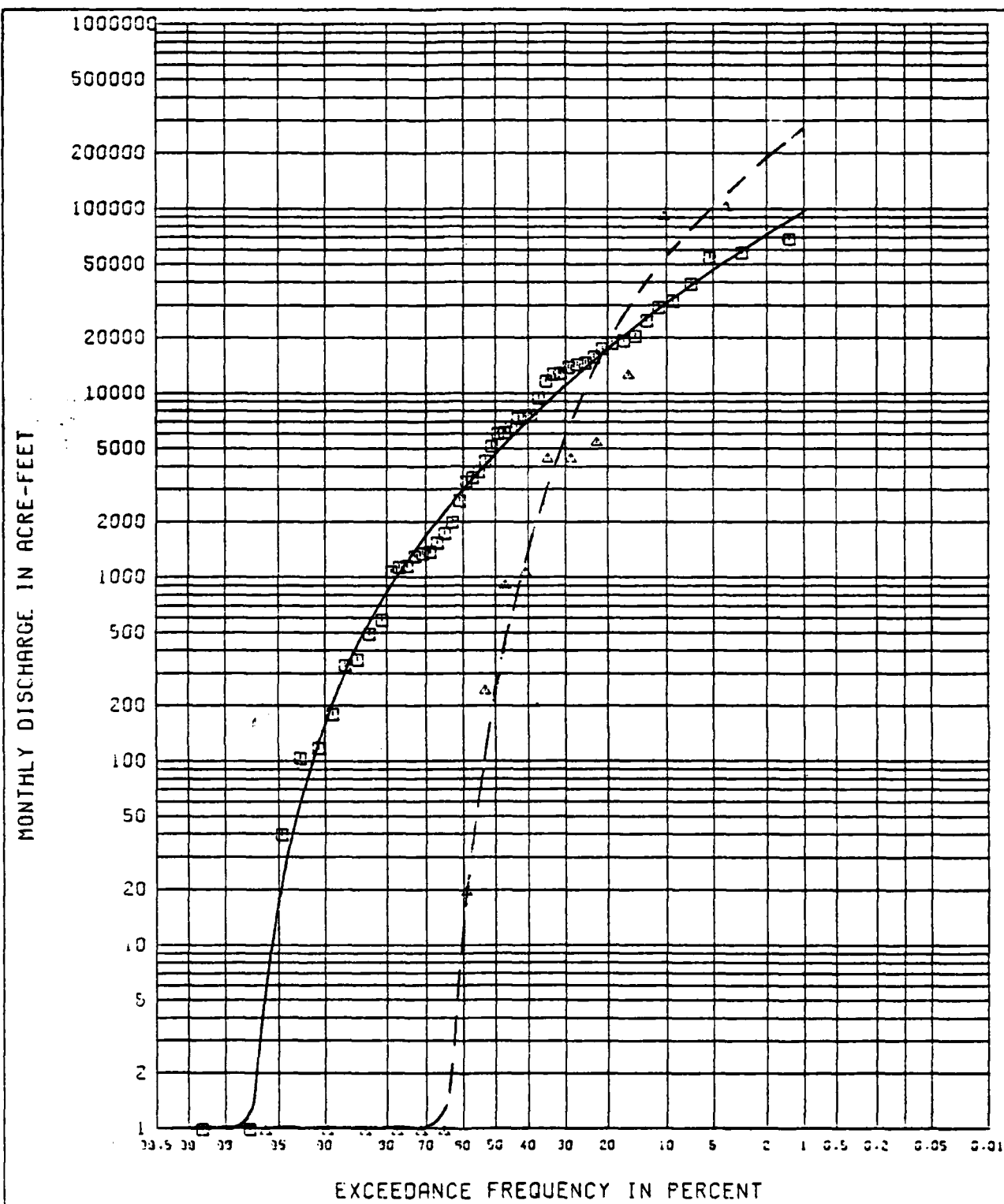
WACO LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

JUNE FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 6



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1907-1955)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

BRAZOS RIVER BASIN, TEXAS

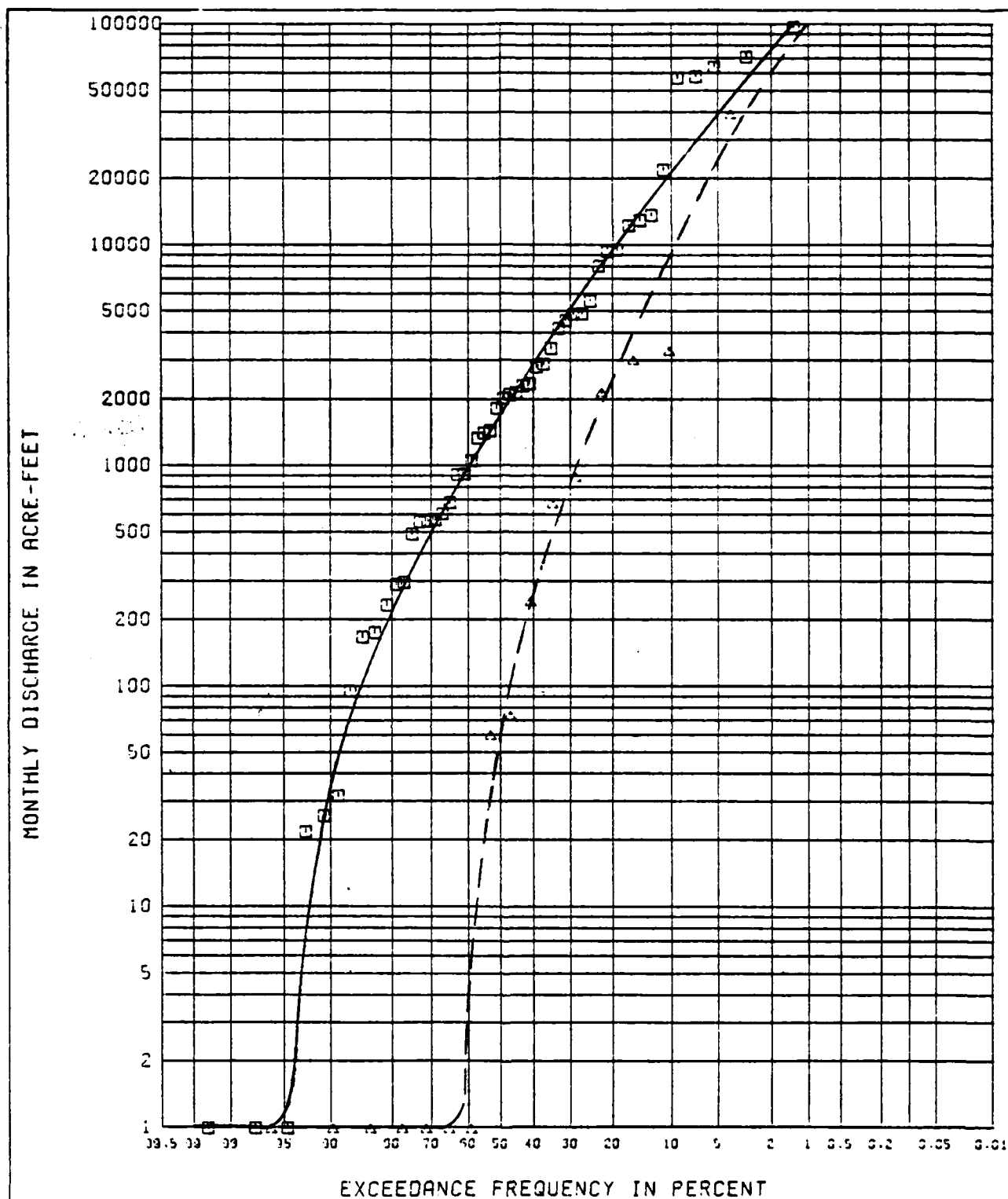
WACO LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

JULY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 7



LEGEND

—■— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1907-1955)

-▲- POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1963-1979)

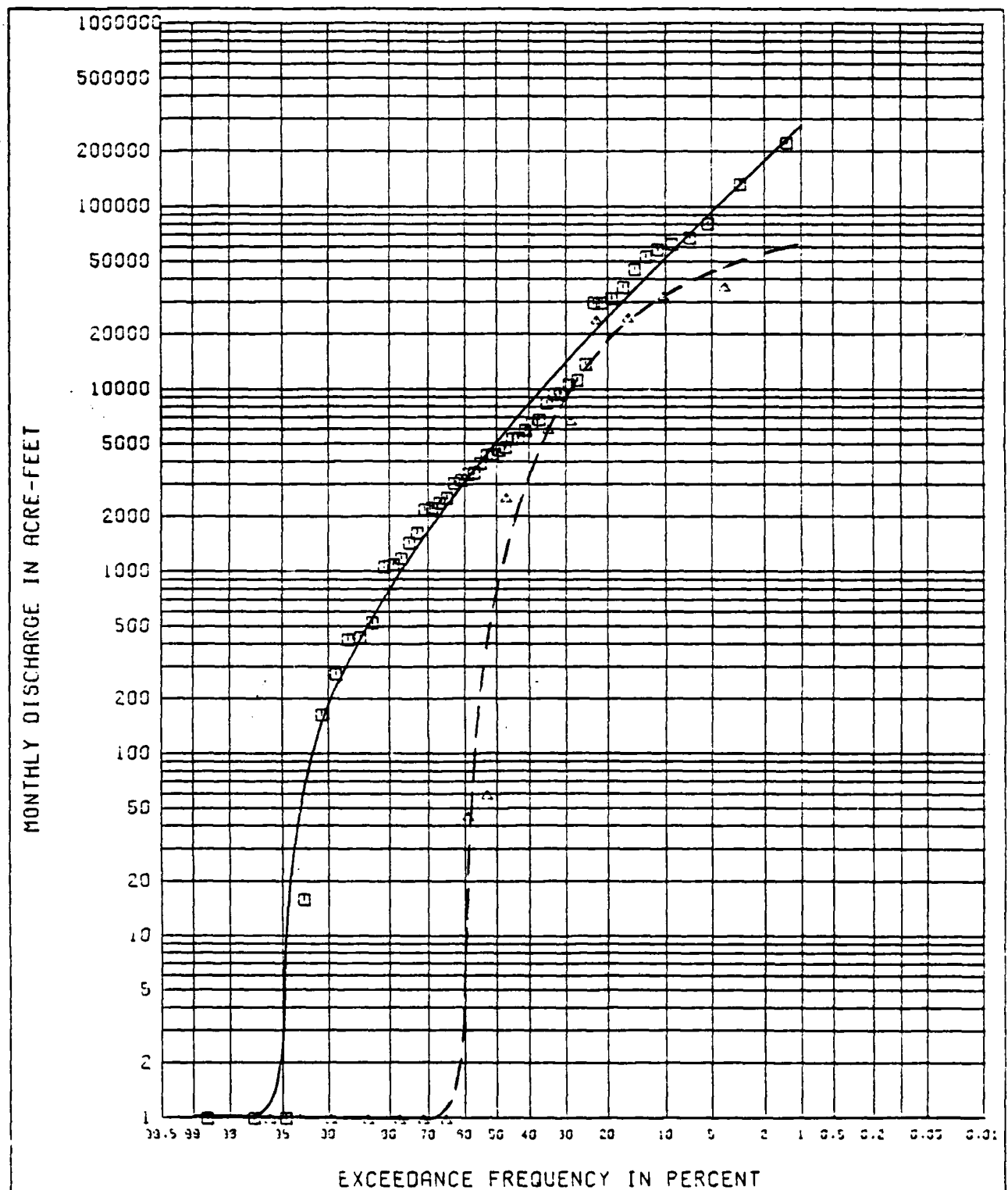
BRAZOS RIVER BASIN, TEXAS

WACO LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
AUGUST FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 8



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1907-1955)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1963-1979)

BRAZOS RIVER BASIN, TEXAS

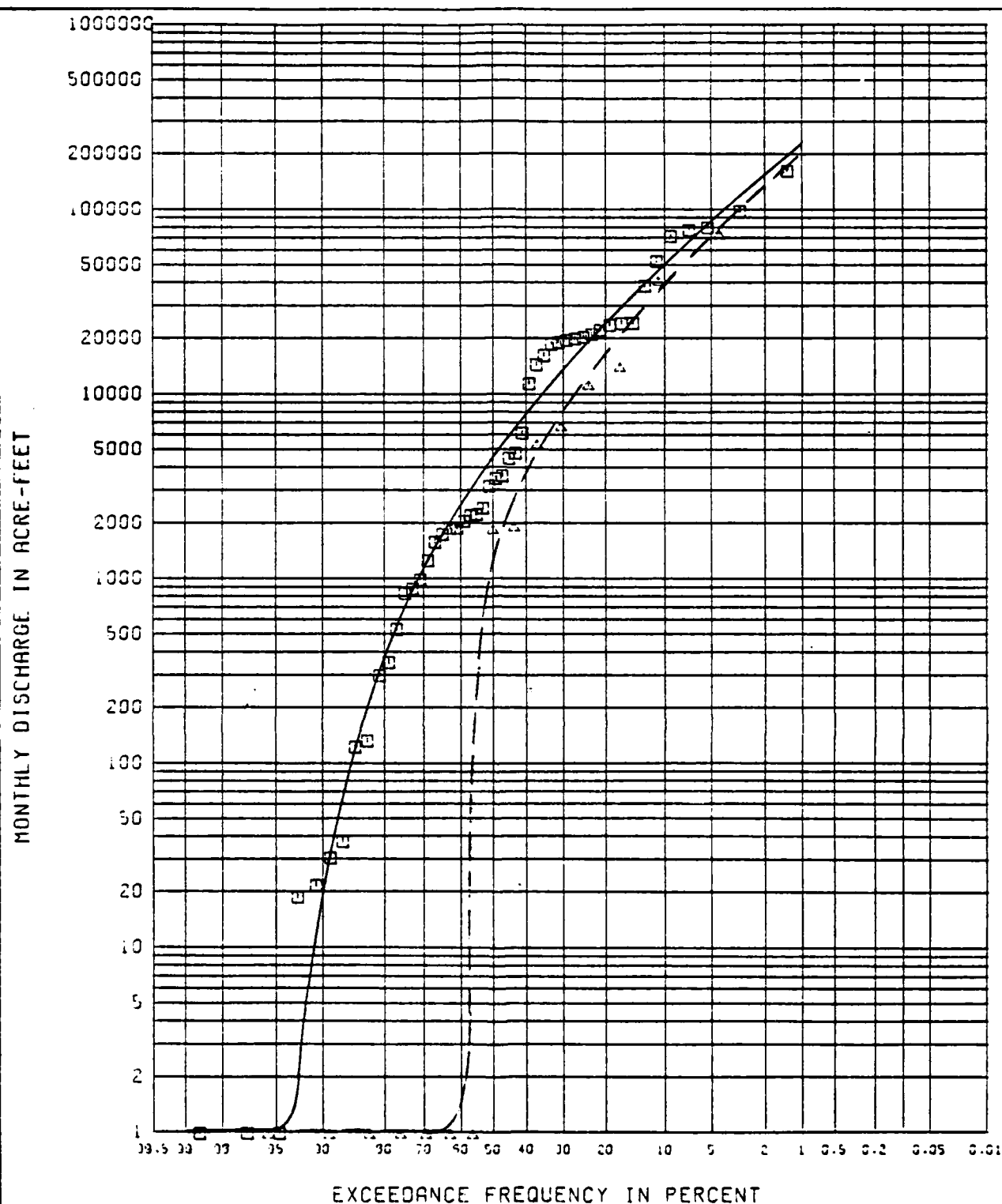
WACO LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

SEPTEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 9



LEGEND

□ — PRE-IMPONDMENT CONDITIONS
(PERIOD OF RECORD 1907-1955)

△ — POST-IMPONDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

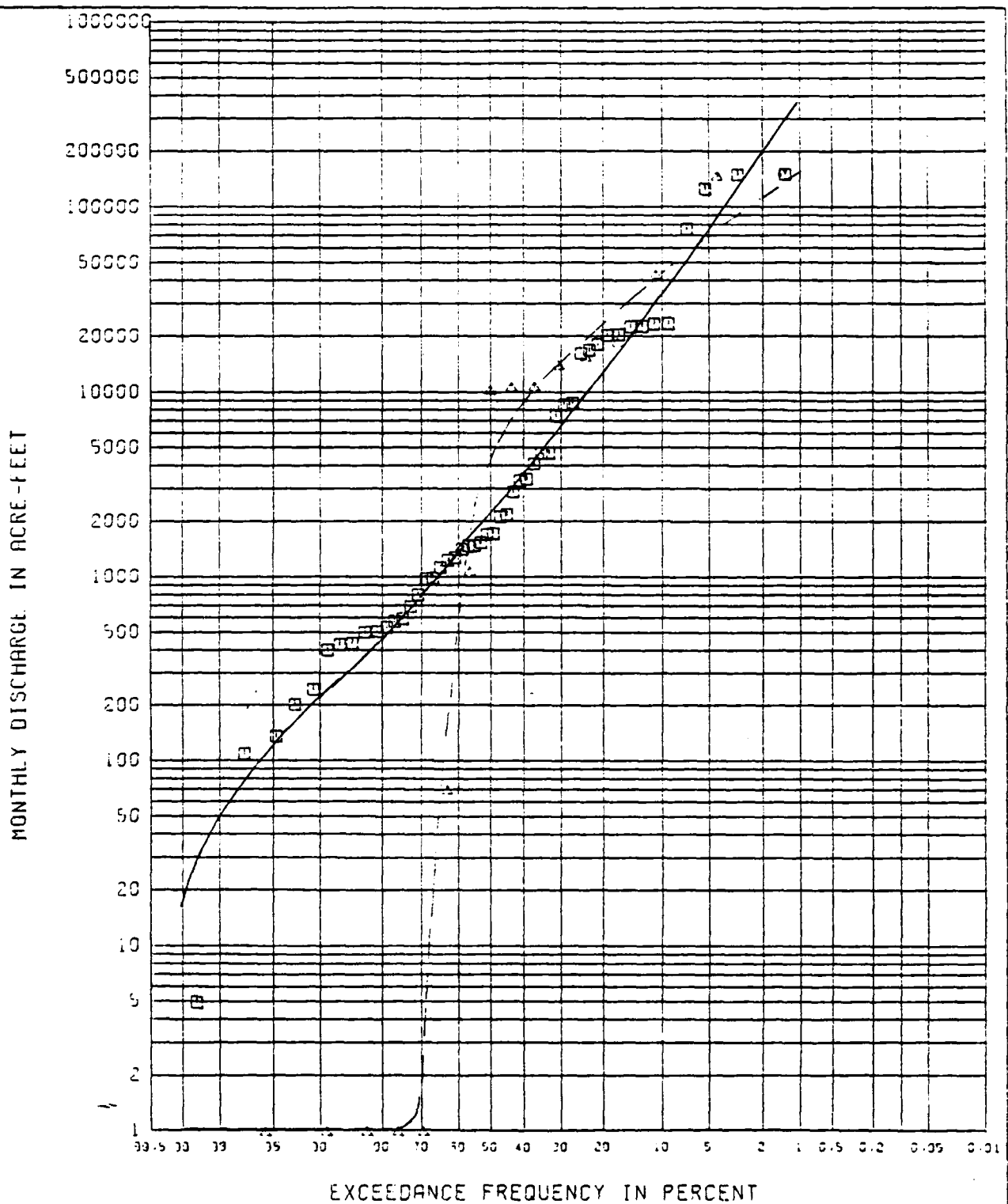
BRAZOS RIVER BASIN, TEXAS

WACO LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
OCTOBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 10



LEGEND

- — □ PRE-IMPOUNDMENT CONDITIONS
 (PERIOD OF RECORD 1907-1959)
- △ — △ POST-IMPOUNDMENT CONDITIONS
 (PERIOD OF RECORD 1953-1978)

BRAZOS RIVER BASIN, TEXAS

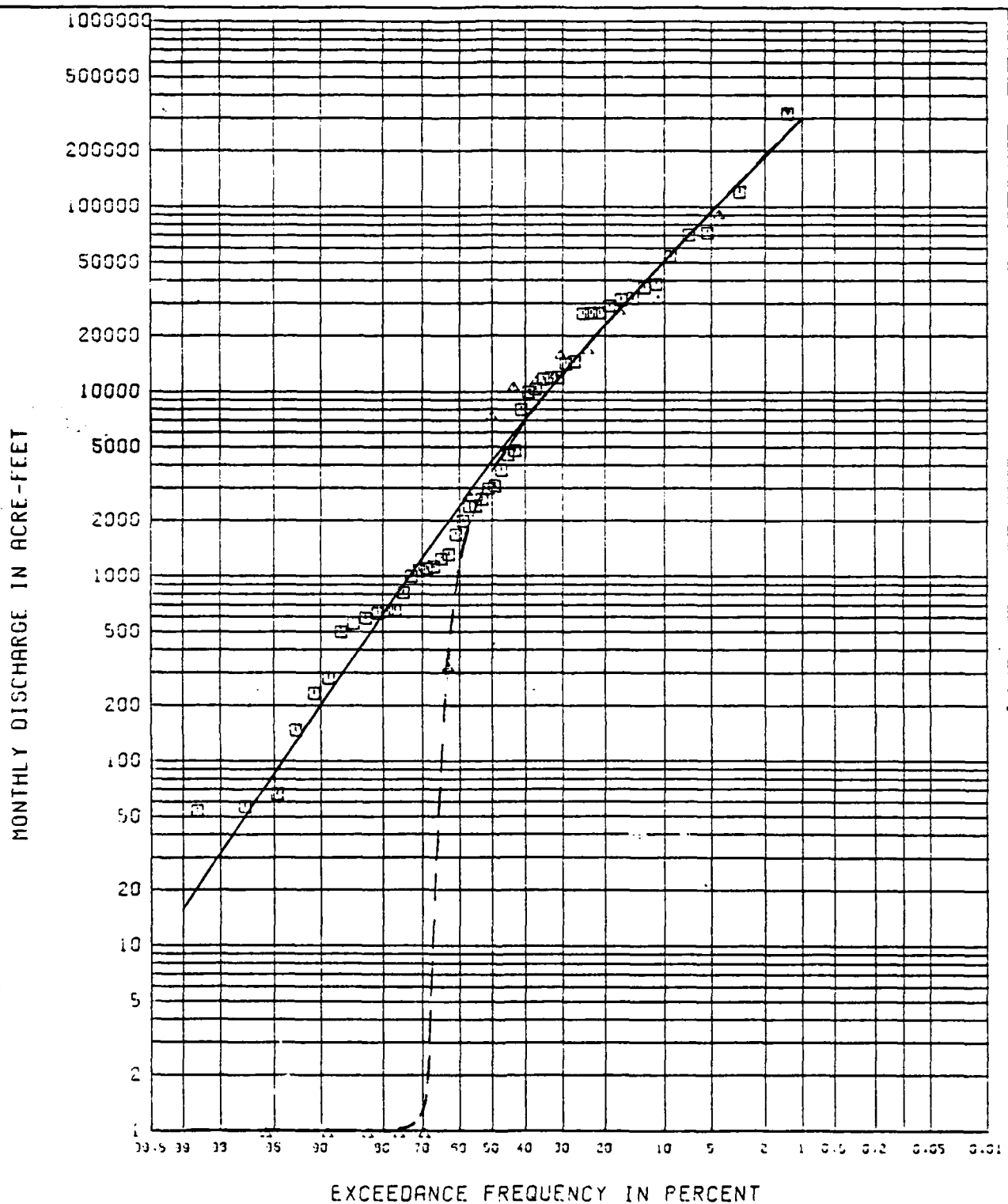
WACO LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

NOVEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
 TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
 EVALUATION REPORT OF DECEMBER 1980

- PLATE II



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1907-1955)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1963-1979)

BRAZOS RIVER BASIN, TEXAS

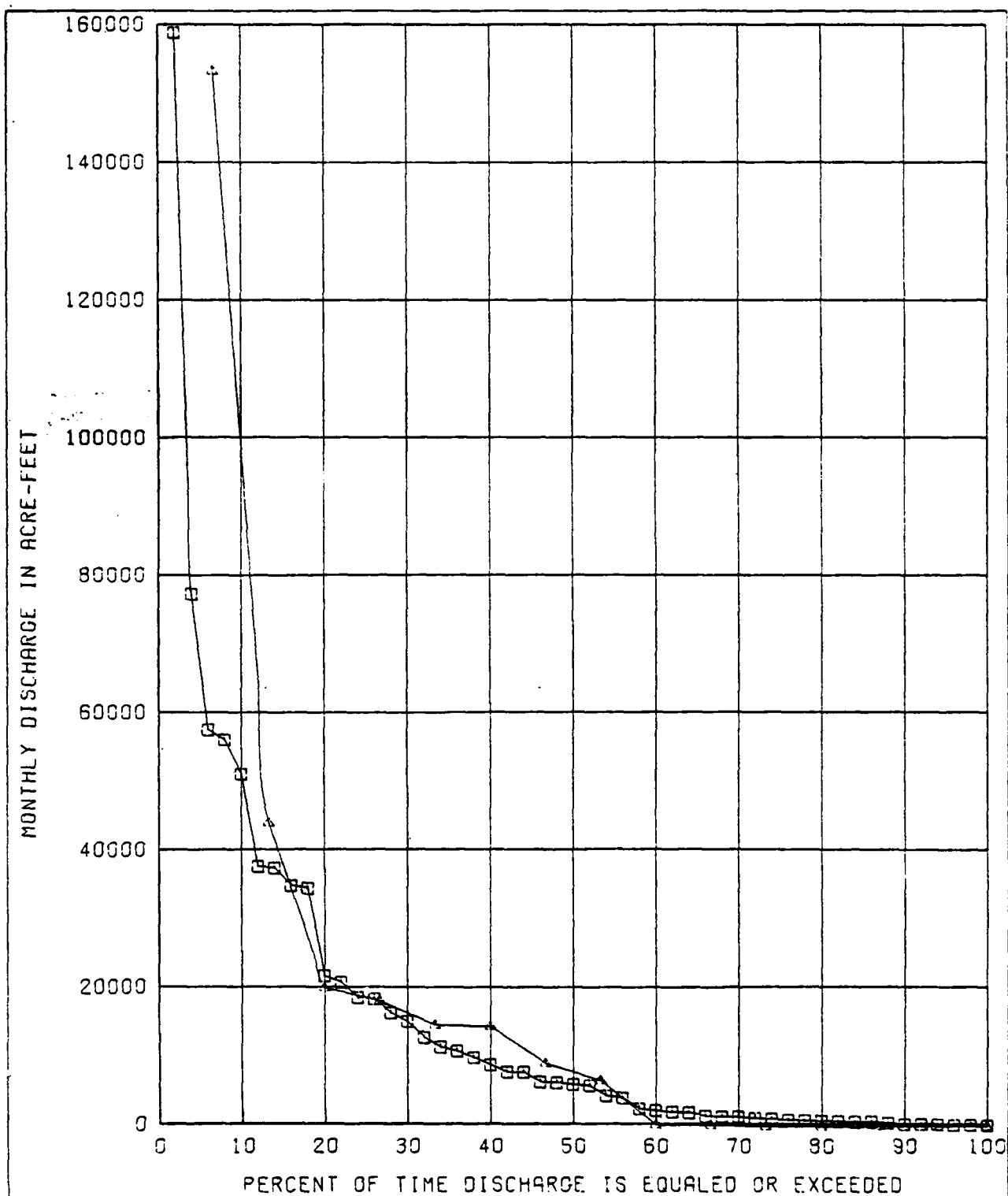
WACO LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

DECEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 12



LEGEND

□ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1907-1955)

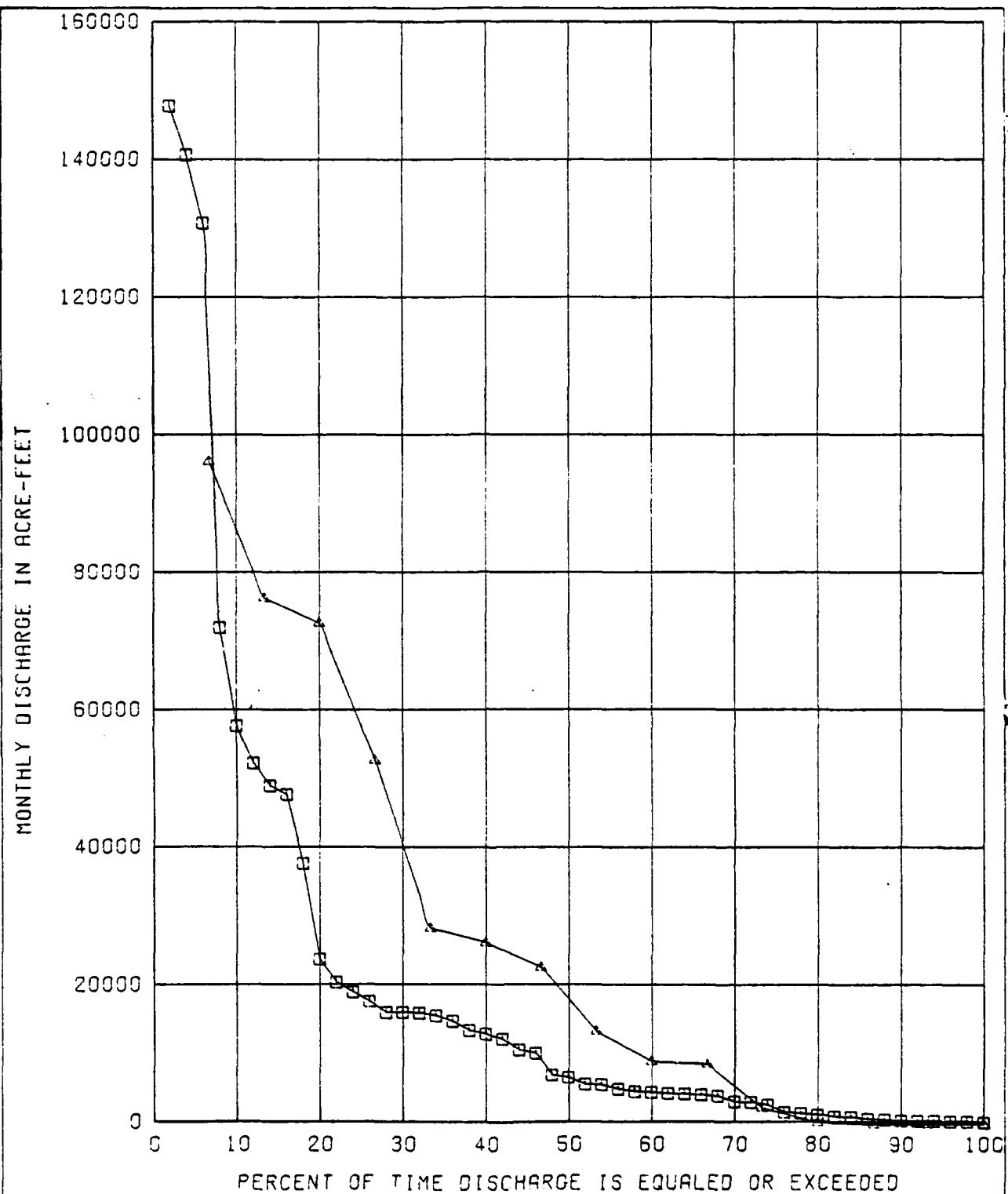
△ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

BRAZOS RIVER BASIN, TEXAS
WACO LAKE

FLOW DURATION CURVES AT DAM SITE
JANUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 13



LEGEND

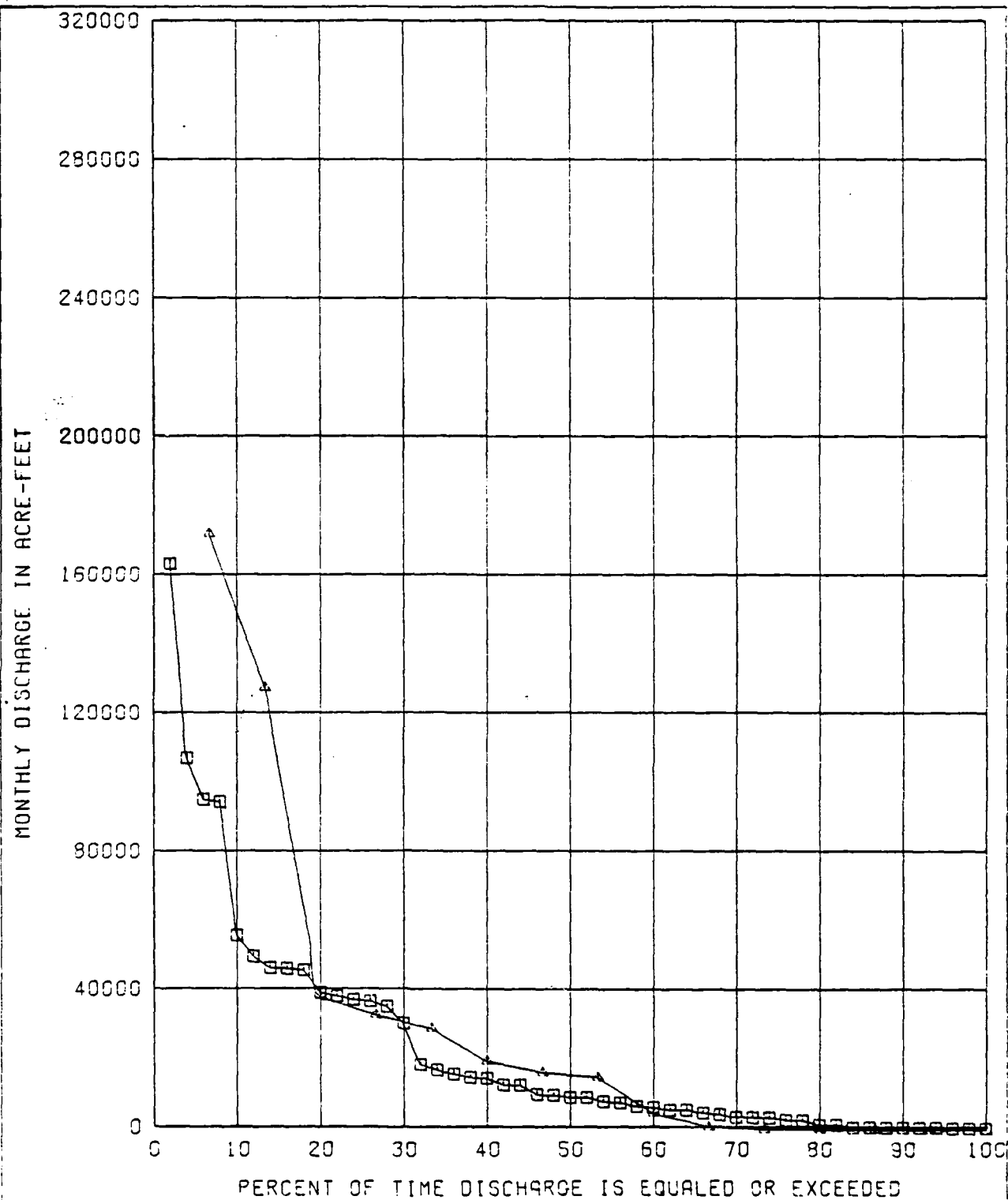
- PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1907-1955)
- △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1963-1979)

BRAZOS RIVER BASIN, TEXAS
WACO LAKE

FLOW DURATION CURVES AT DAM SITE
FEBRUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 14



LEGEND

□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1907-1955)

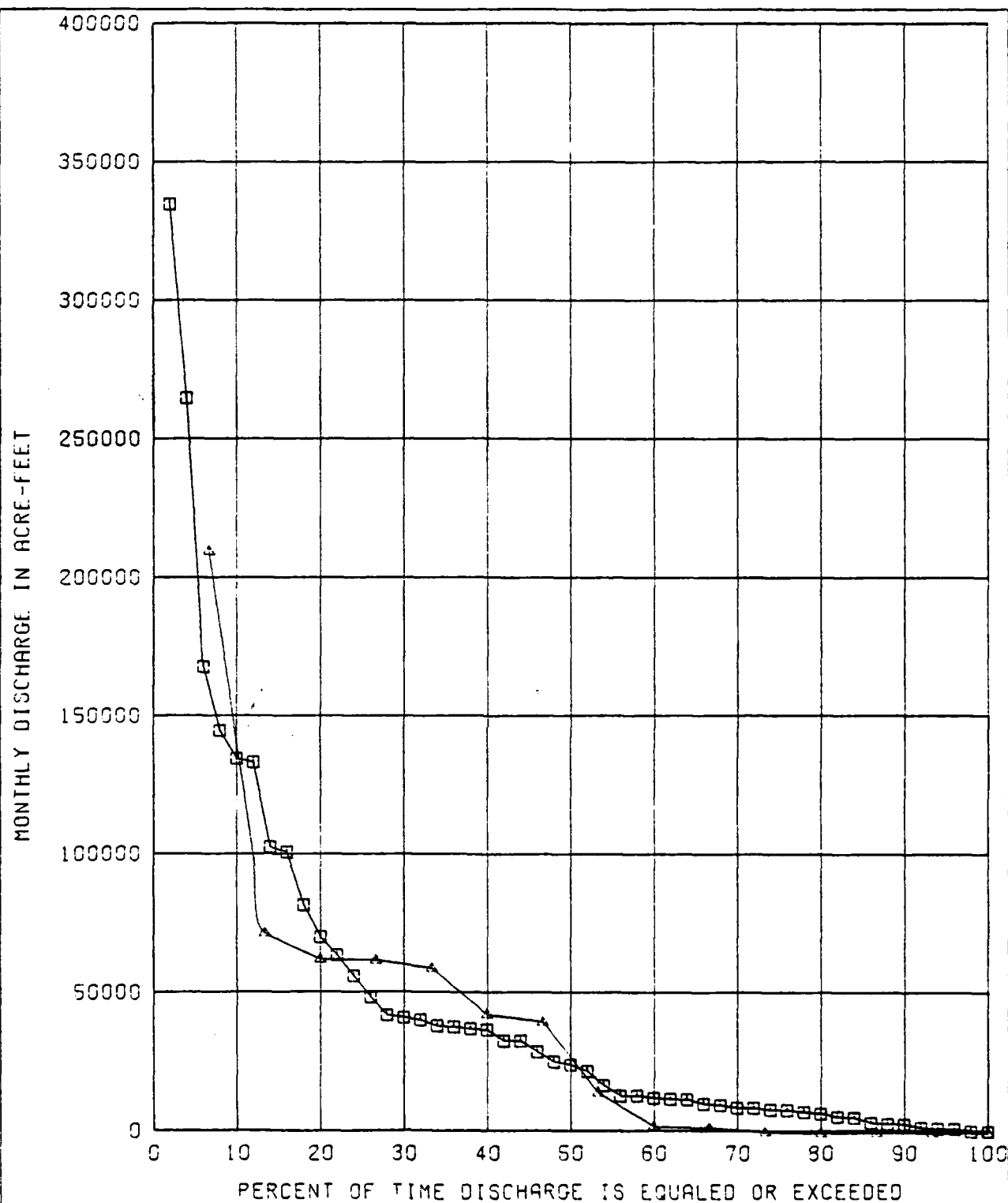
▲ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

BRAZOS RIVER BASIN, TEXAS
WACO LAKE

FLOW DURATION CURVES AT DAM SITE
MARCH FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 15



LEGEND

□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1907-1955)

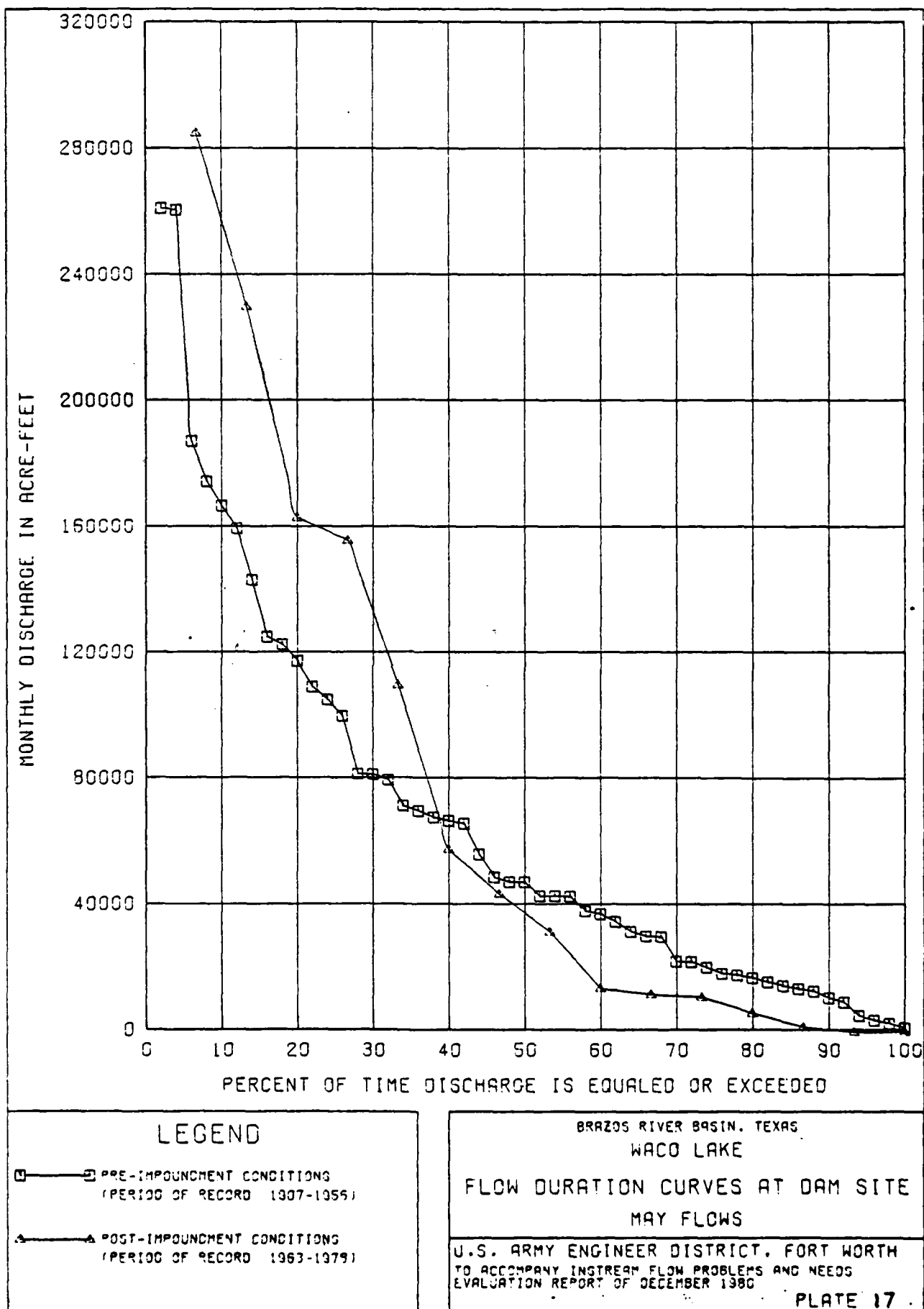
△ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

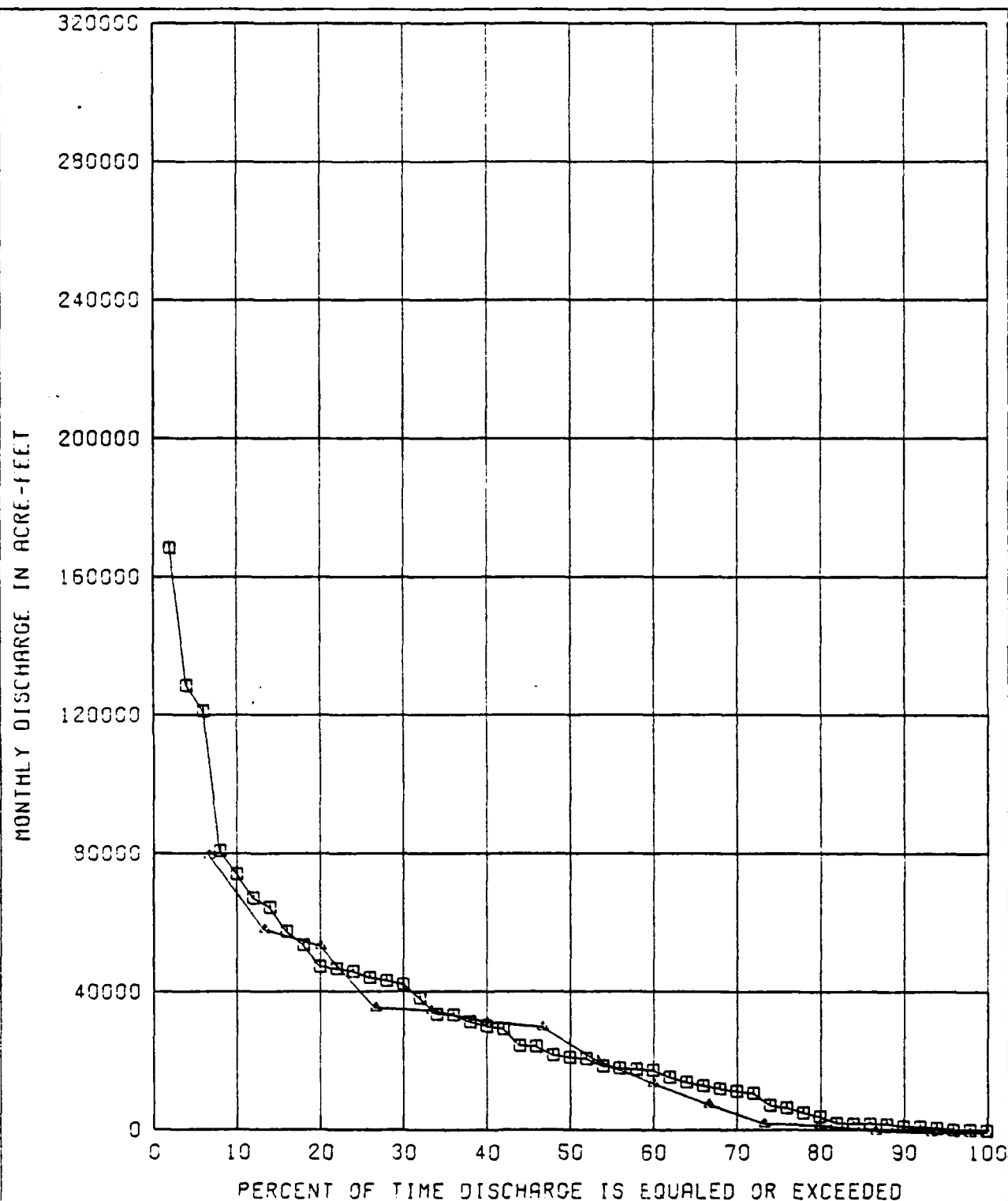
BRAZOS RIVER BASIN, TEXAS
WACO LAKE

FLOW DURATION CURVES AT DAM SITE
APRIL FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 16





LEGEND

□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1907-1959)

▲ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1963-1979)

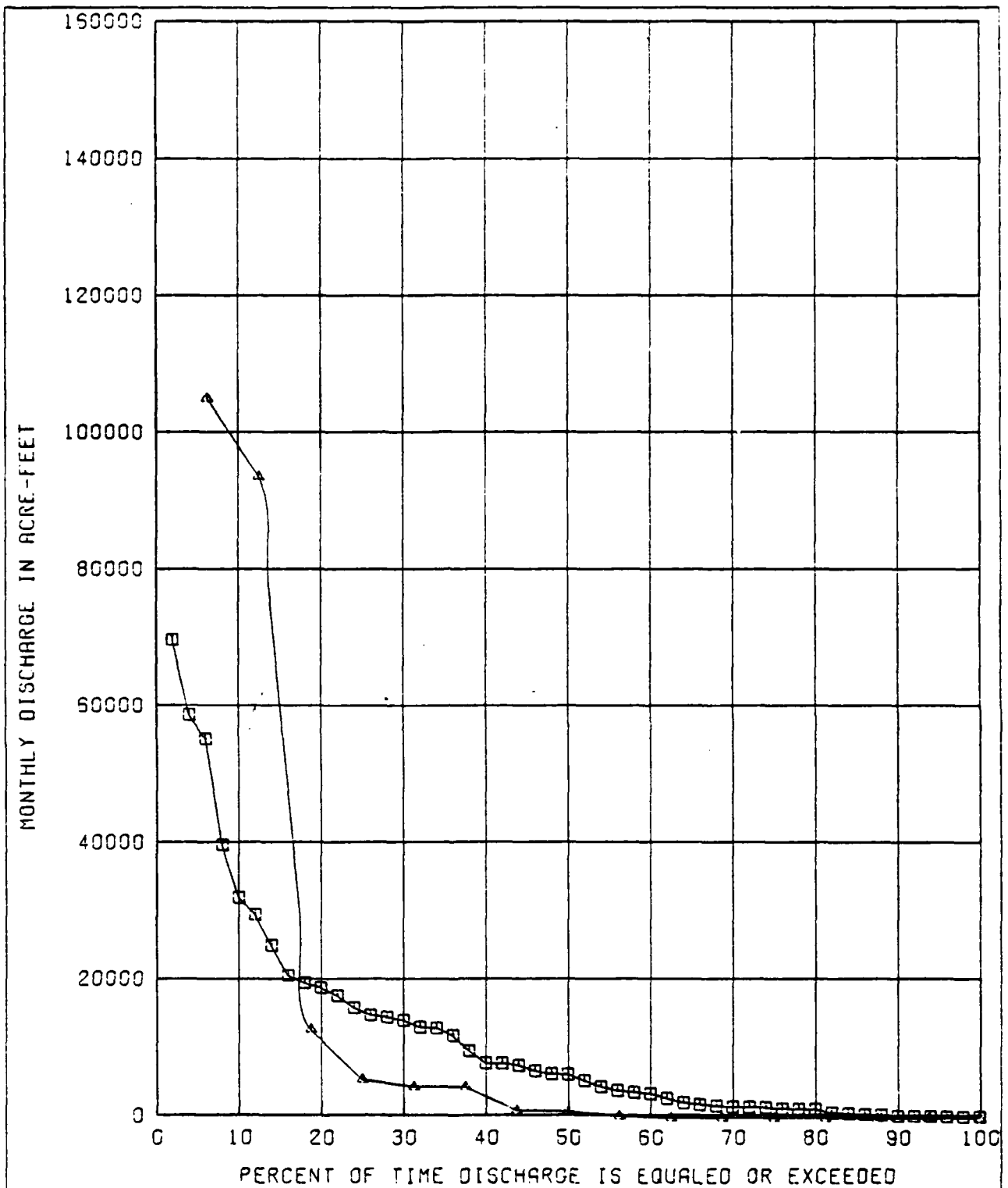
BRAZOS RIVER BASIN, TEXAS

WACO LAKE

FLOW DURATION CURVES AT DAM SITE
JUNE FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE-18



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1907-1959)

▲ — ▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

BRAZOS RIVER BASIN, TEXAS

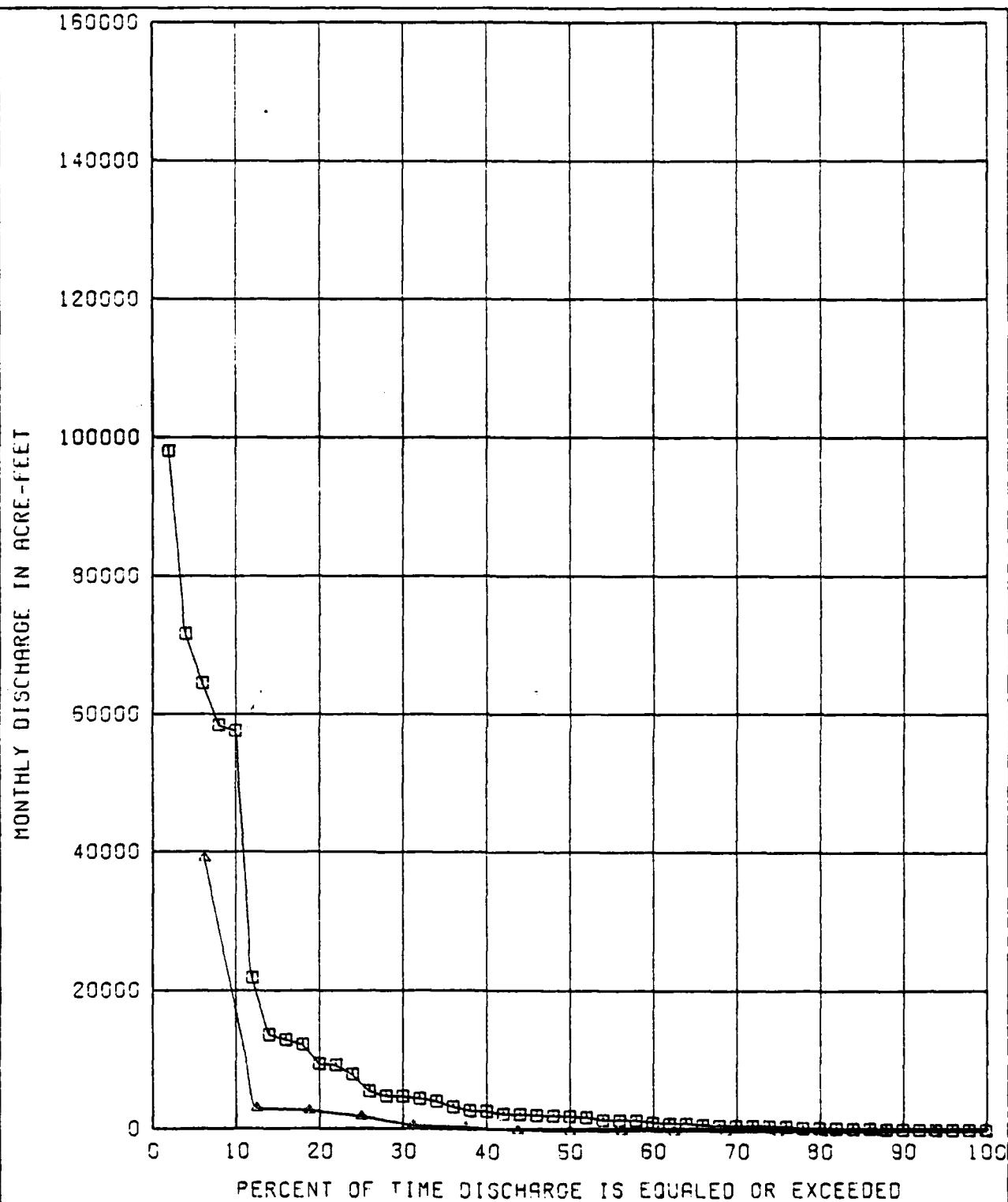
WACO LAKE

FLOW DURATION CURVES AT DAM SITE

JULY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1950

PLATE 19



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1907-1955)

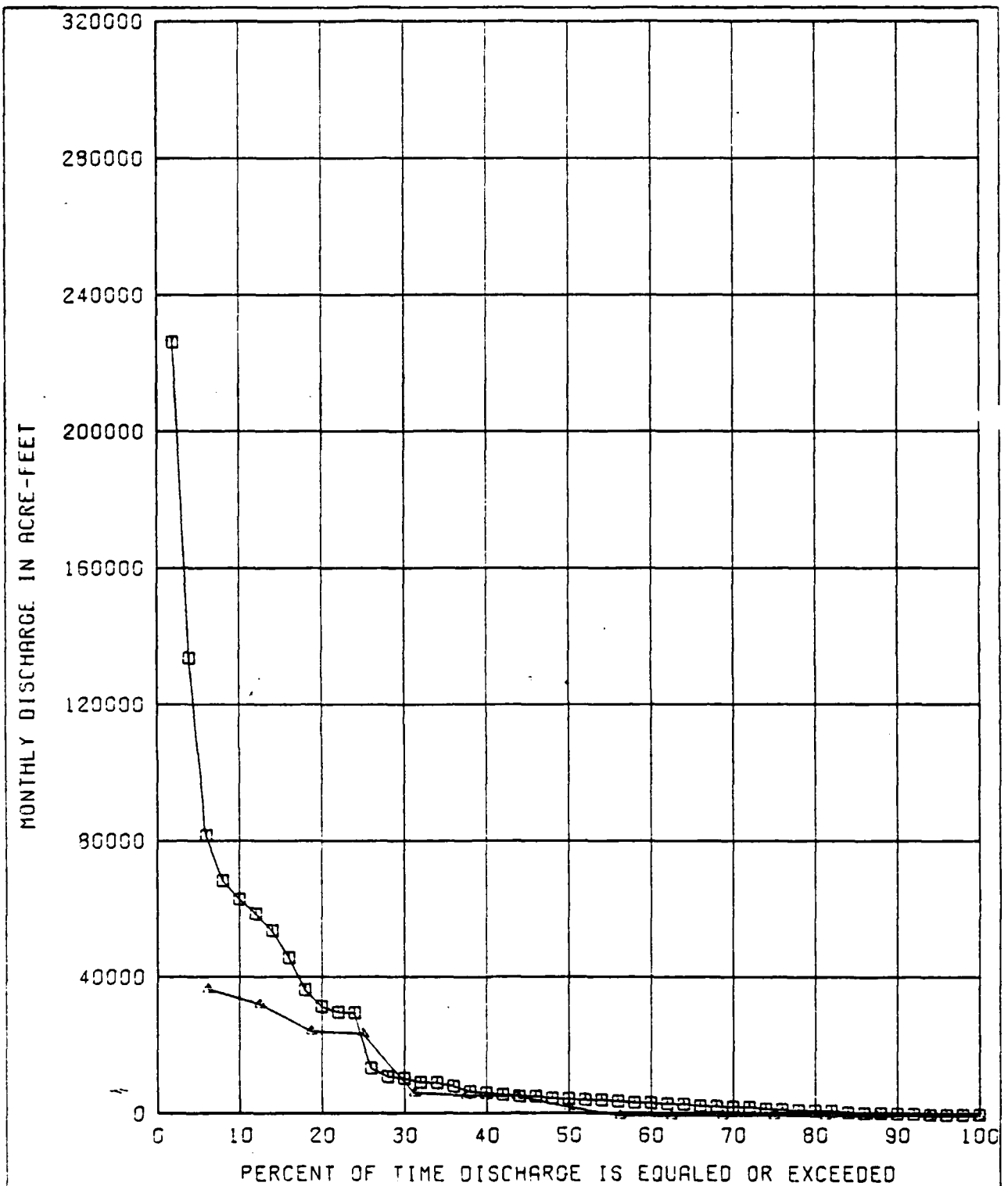
▲ — ▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

BRAZOS RIVER BASIN, TEXAS
WACO LAKE

FLOW DURATION CURVES AT DAM SITE
AUGUST FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 20



LEGEND

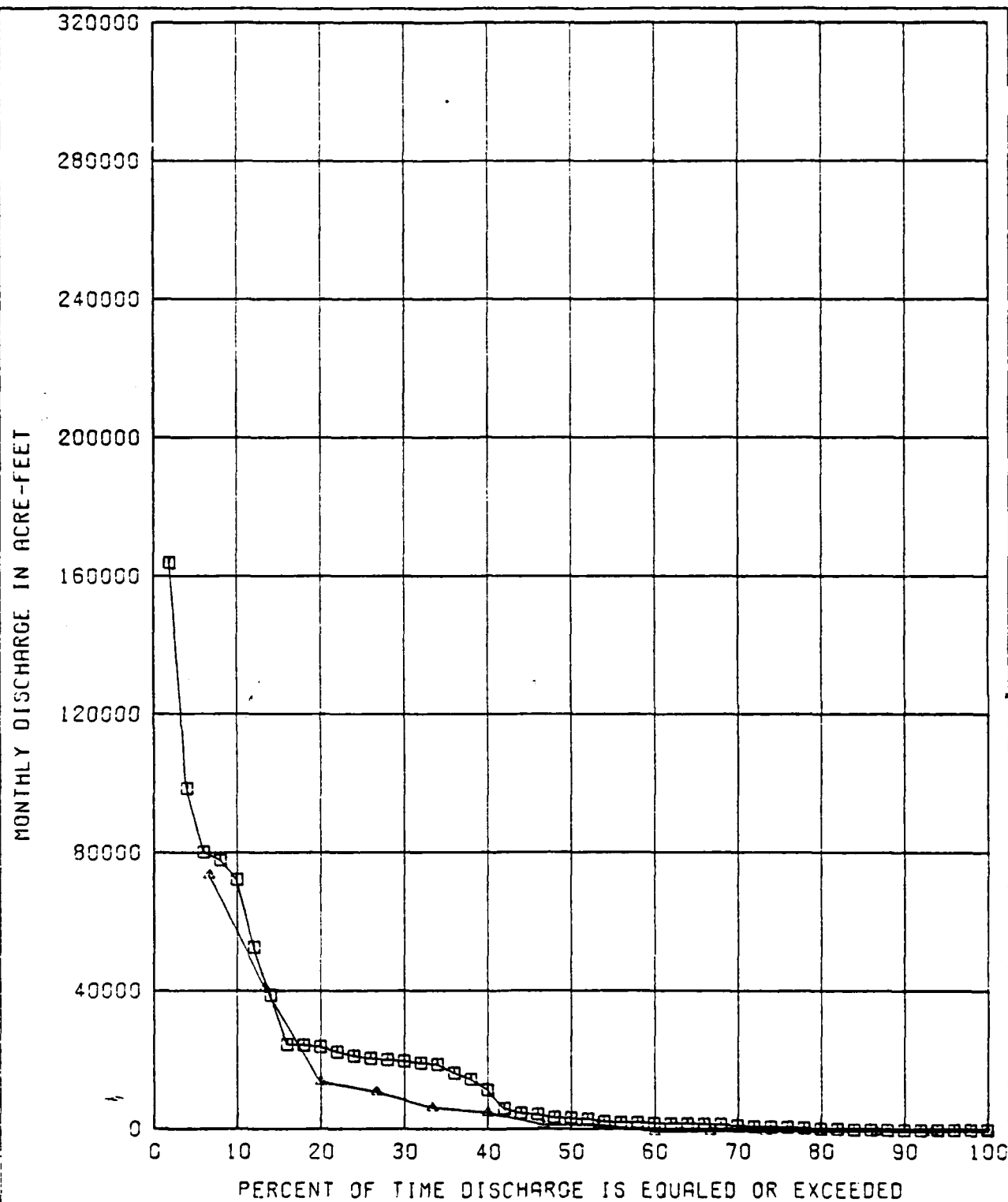
- — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1907-1955)
- ▲ — ▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1963-1979)

BRAZOS RIVER BASIN, TEXAS
WACO LAKE

FLOW DURATION CURVES AT DAM SITE
SEPTEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 21



LEGEND

□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1907-1955)

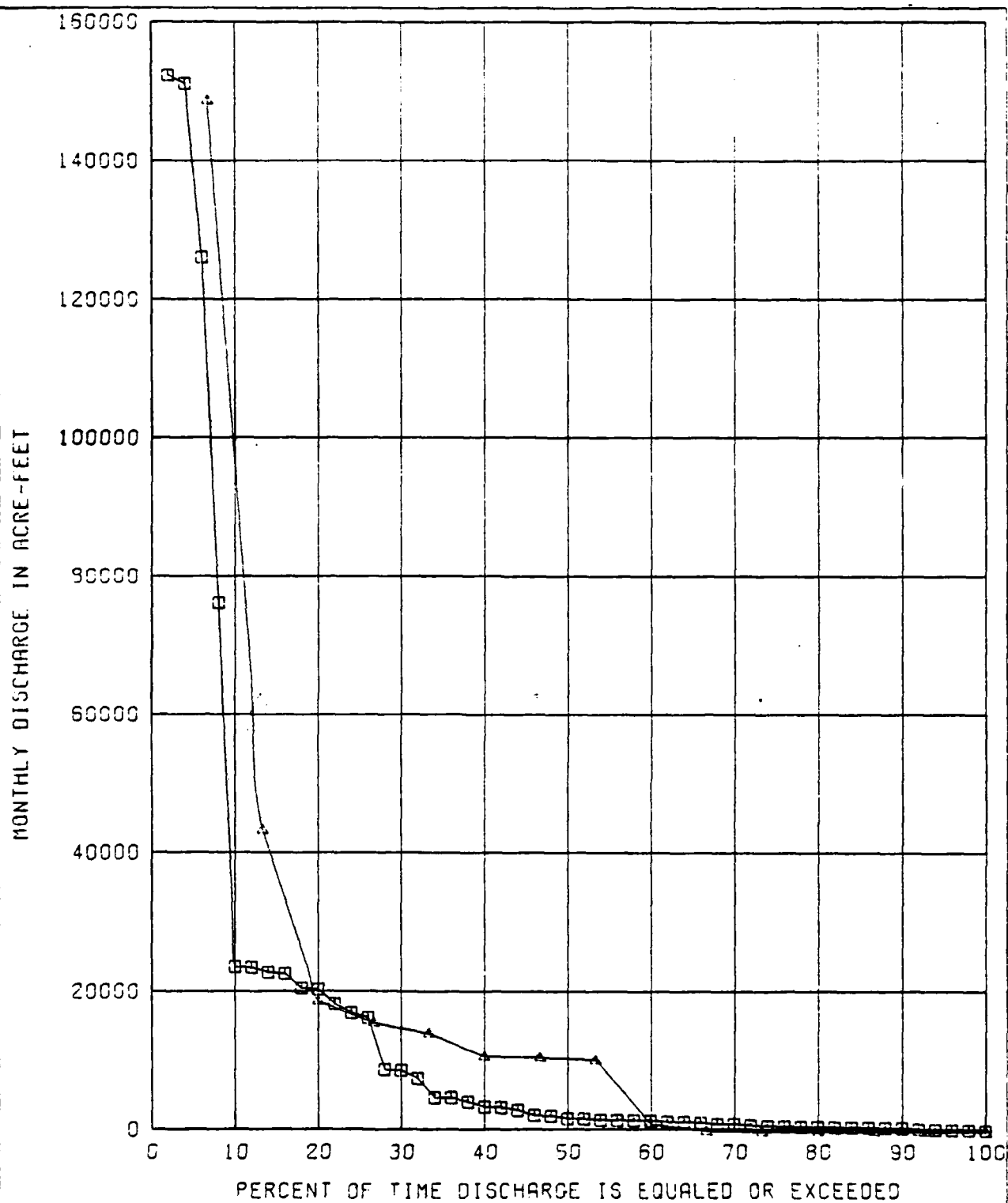
▲ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

BRAZOS RIVER BASIN, TEXAS
WACO LAKE

FLOW DURATION CURVES AT DAM SITE
OCTOBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 22



LEGEND

□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1907-1955)

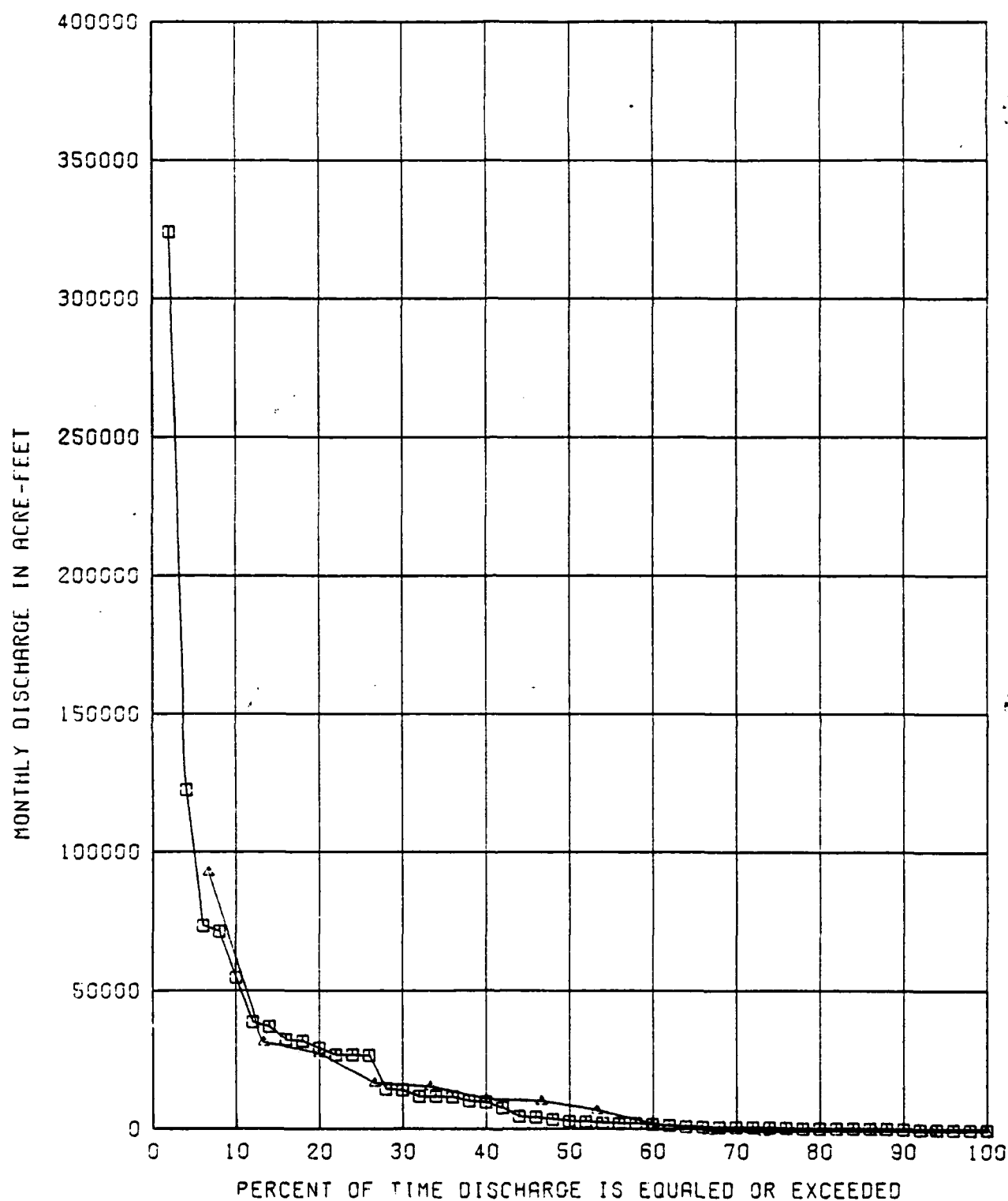
▲ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1963-1979)

BRAZOS RIVER BASIN, TEXAS
WACO LAKE

FLOW DURATION CURVES AT DAM SITE
NOVEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 23



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1907-1959)

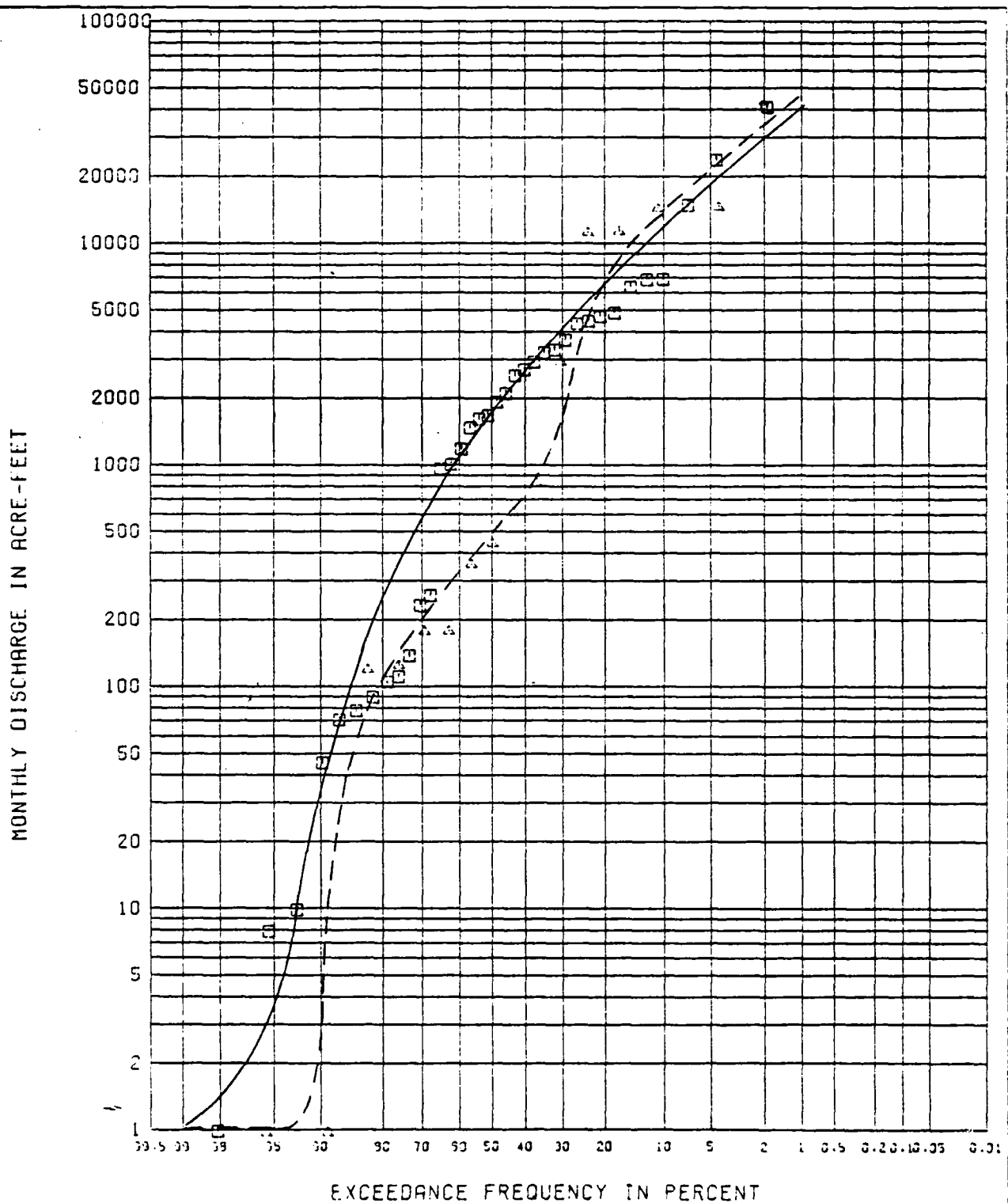
▲ — ▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1993-1979)

BRAZOS RIVER BASIN, TEXAS
WACO LAKE

FLOW DURATION CURVES AT DAM SITE
DECEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 24



LEGEND

○ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1922-1959)

△ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1963-1979)

BRAZOS RIVER BASIN, TEXAS

PROCTOR LAKE

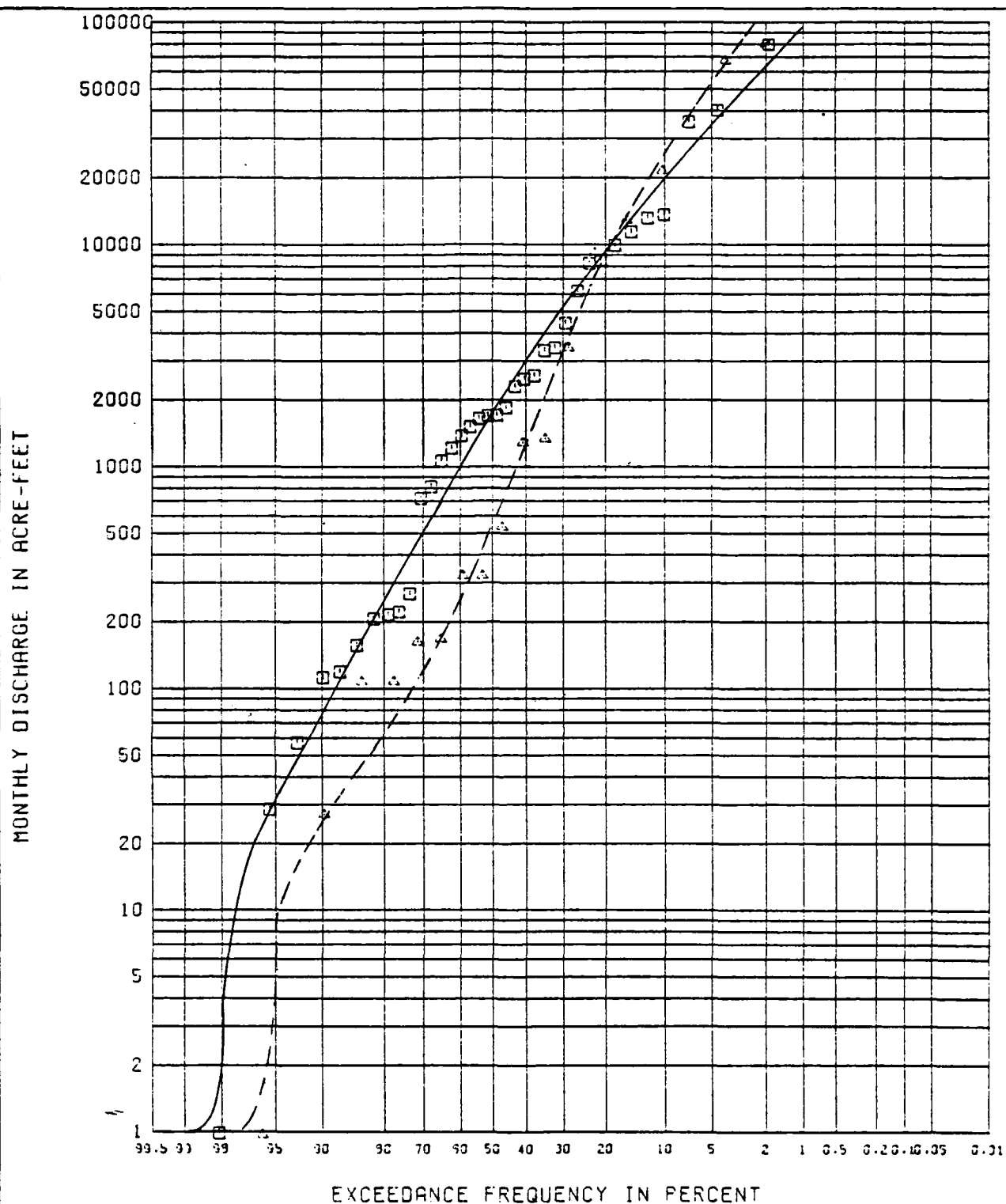
DISCHARGE-FREQUENCY RELATIONS

AT DAM SITE

JANUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE I



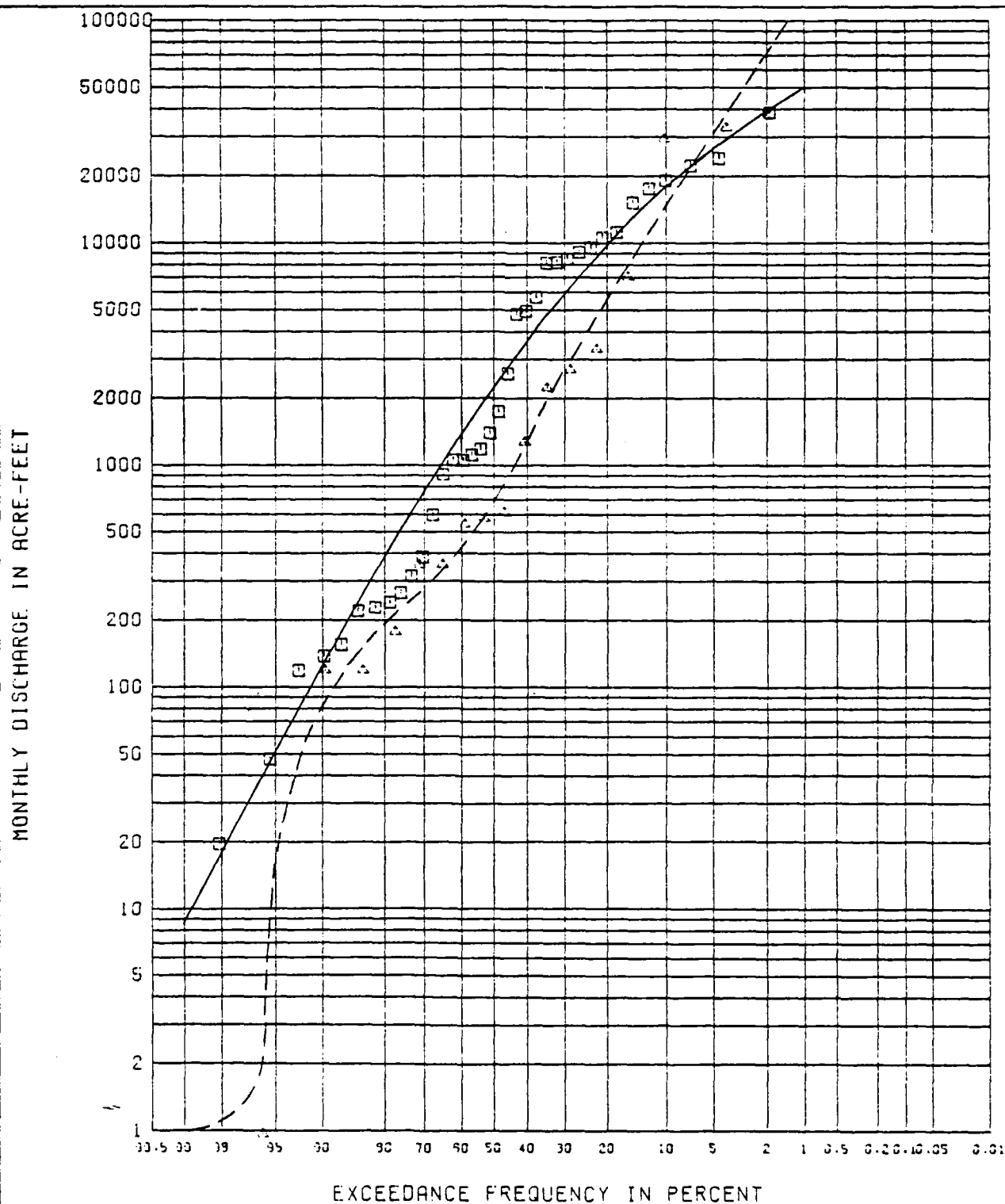
LEGEND

- — □ PRE-IMPOUNDMENT CONDITIONS
 (PERIOD OF RECORD 1922-1959)
- △ — △ POST-IMPOUNDMENT CONDITIONS
 (PERIOD OF RECORD 1963-1979)

BRAZOS RIVER BASIN, TEXAS
 PROCTOR LAKE
 DISCHARGE-FREQUENCY RELATIONS
 AT DAM SITE
 FEBRUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
 TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
 EVALUATION REPORT OF DECEMBER 1980

PLATE 2



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1922-1959)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1963-1979)

BRAZOS RIVER BASIN, TEXAS

PROCTOR LAKE

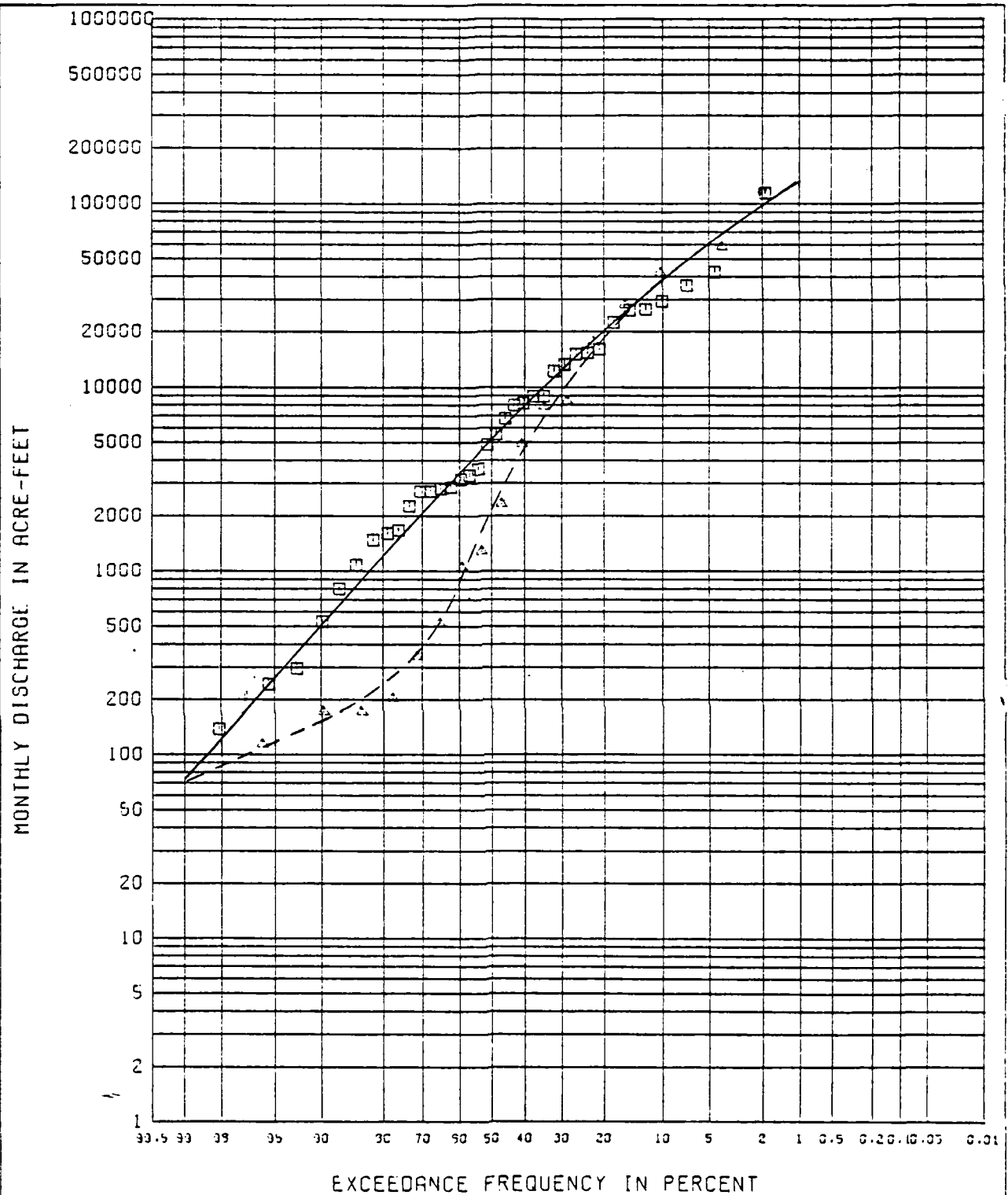
DISCHARGE-FREQUENCY RELATIONS

AT DAM SITE

MARCH FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 3



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1922-1959)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

BRAZOS RIVER BASIN, TEXAS

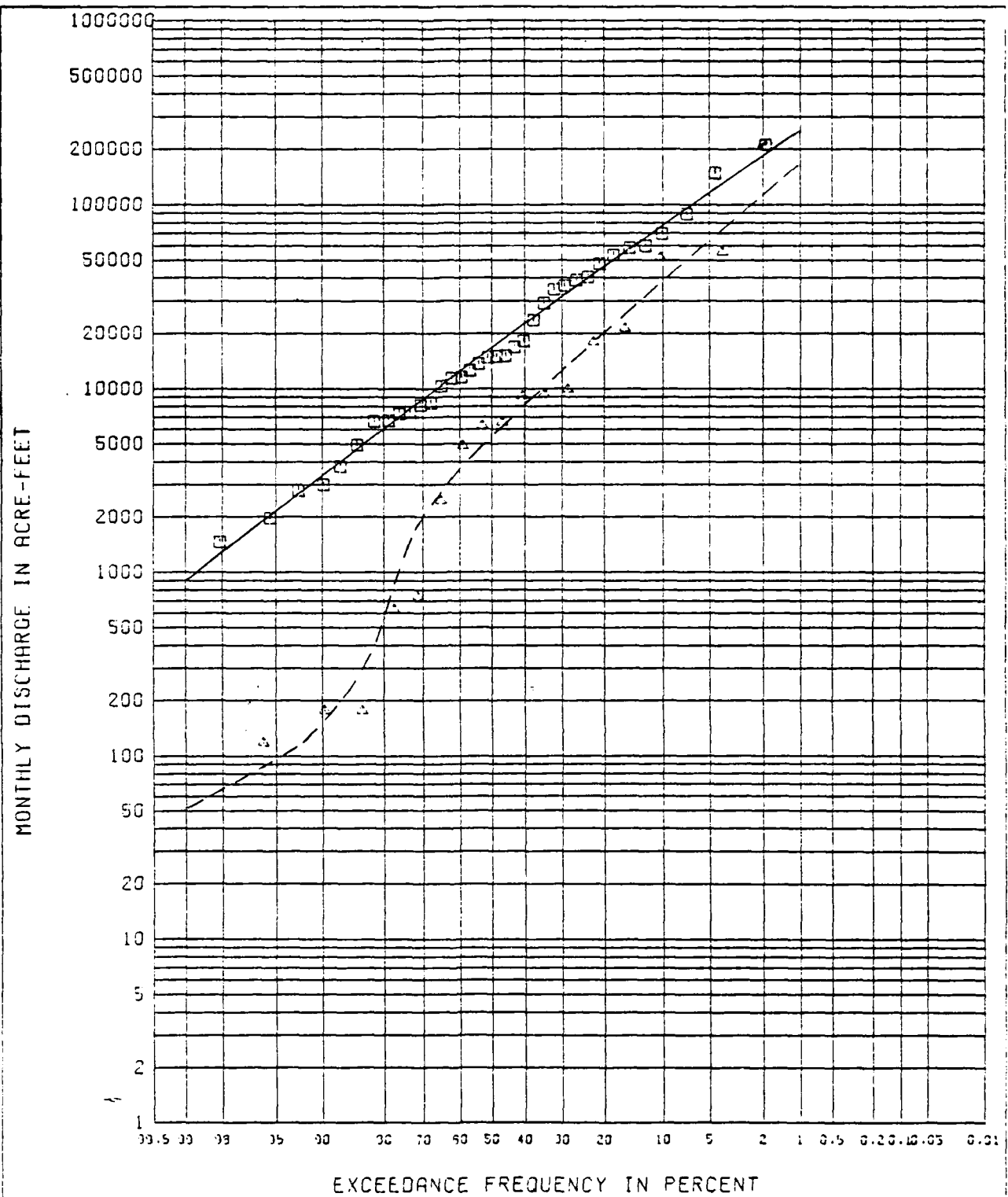
PROCTOR LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

APRIL FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER, 1990

PLATE 4



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1922-1959)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1963-1979)

BRAZOS RIVER BASIN, TEXAS

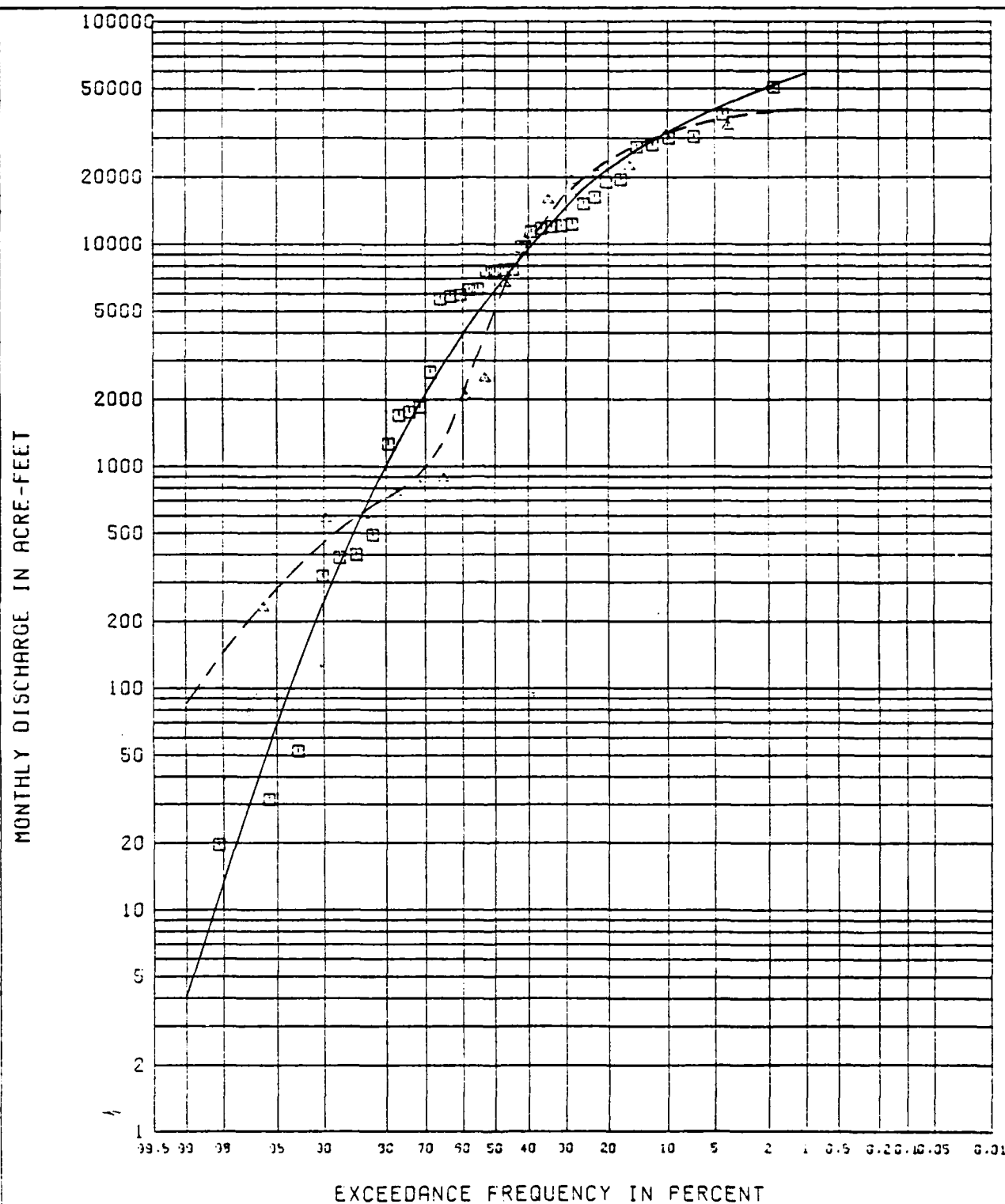
PROCTOR LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

MAY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 5



LEGEND

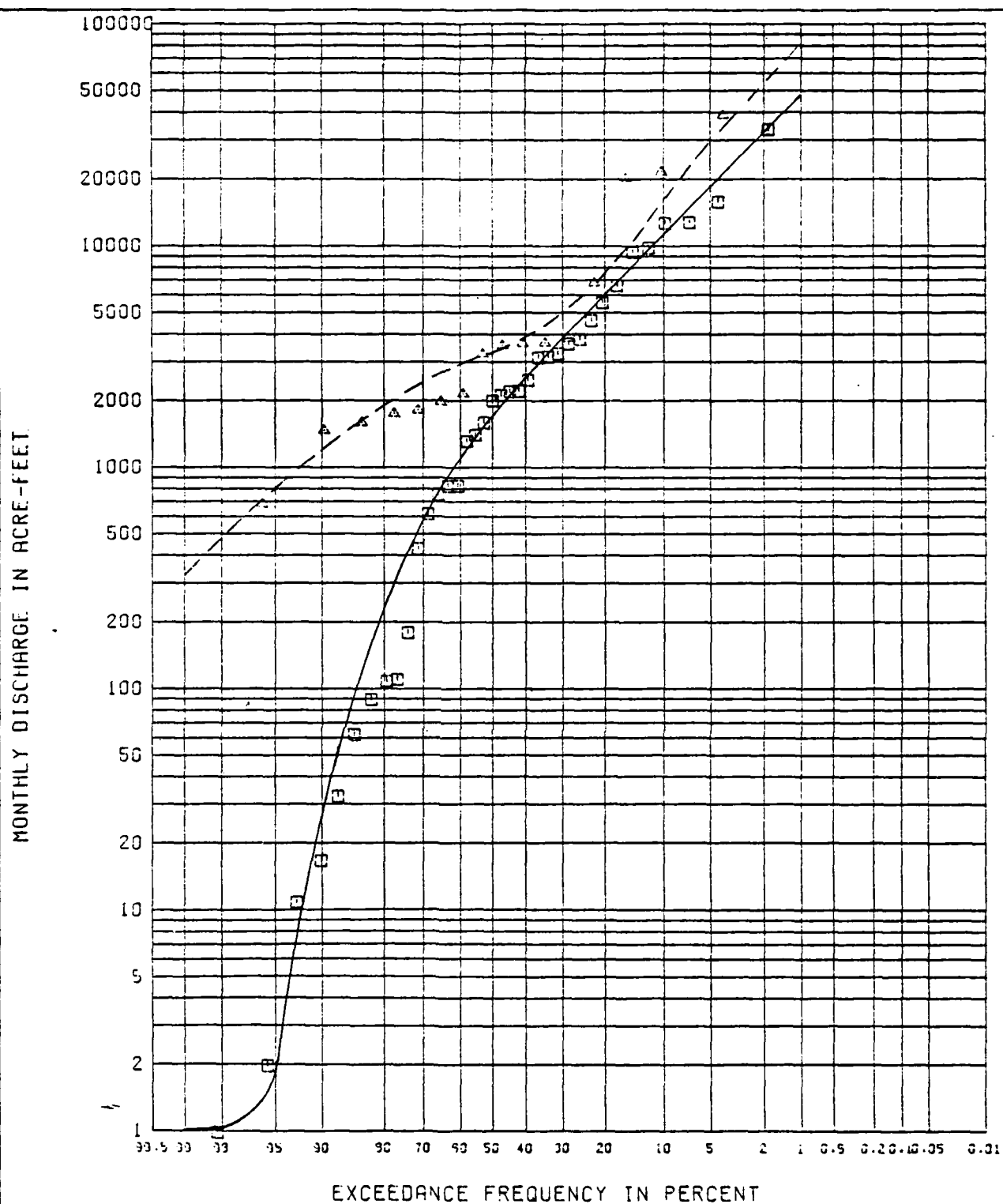
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(PERIOD OF RECORD 1922-1959)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1963-1979)

BRAZOS RIVER BASIN, TEXAS
PROCTOR LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
JUNE FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 6



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1922-1959)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1963-1979)

BRAZOS RIVER BASIN, TEXAS

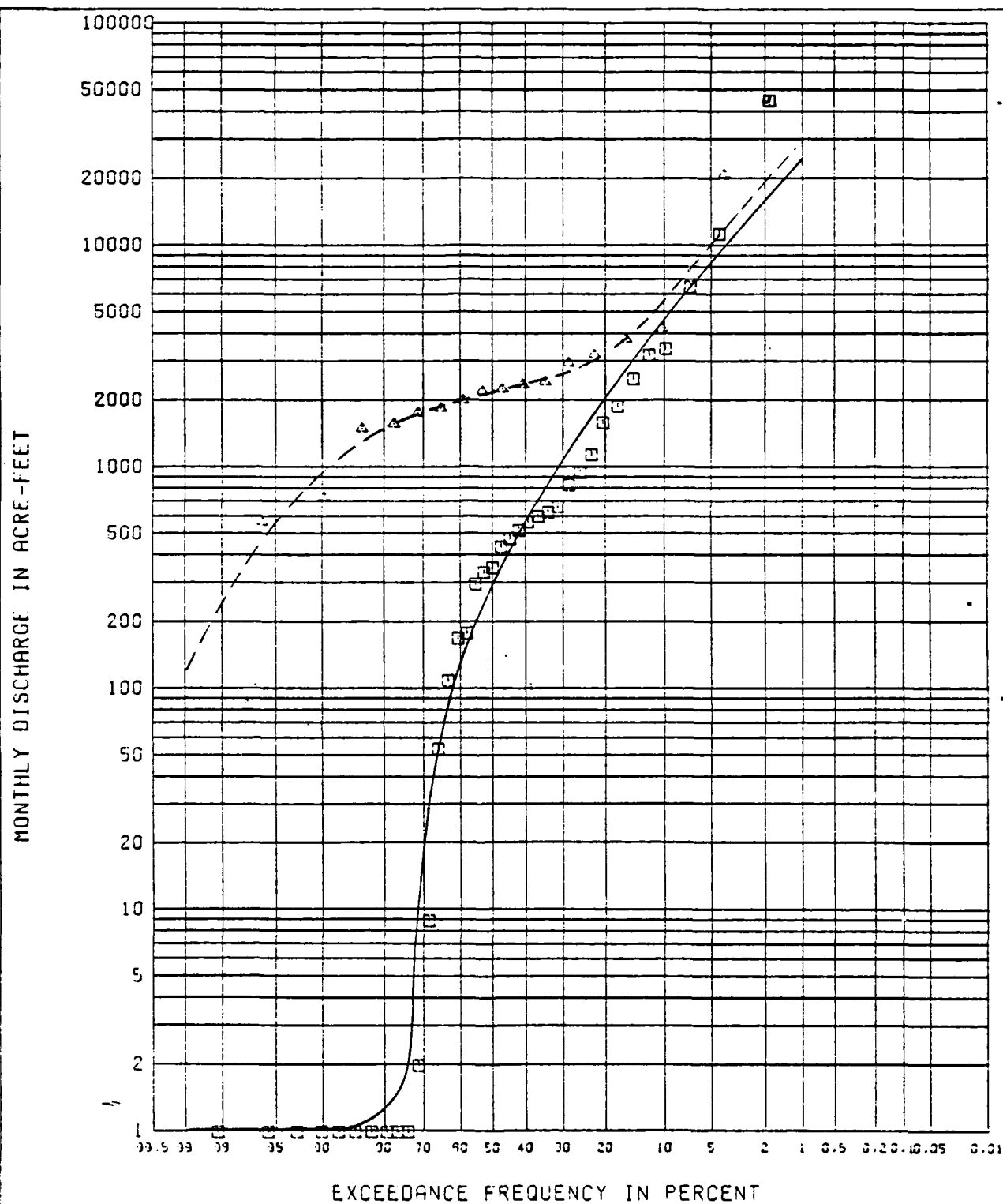
PROCTOR LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

JULY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 7



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1922-1959)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1963-1978)

BRAZOS RIVER BASIN, TEXAS

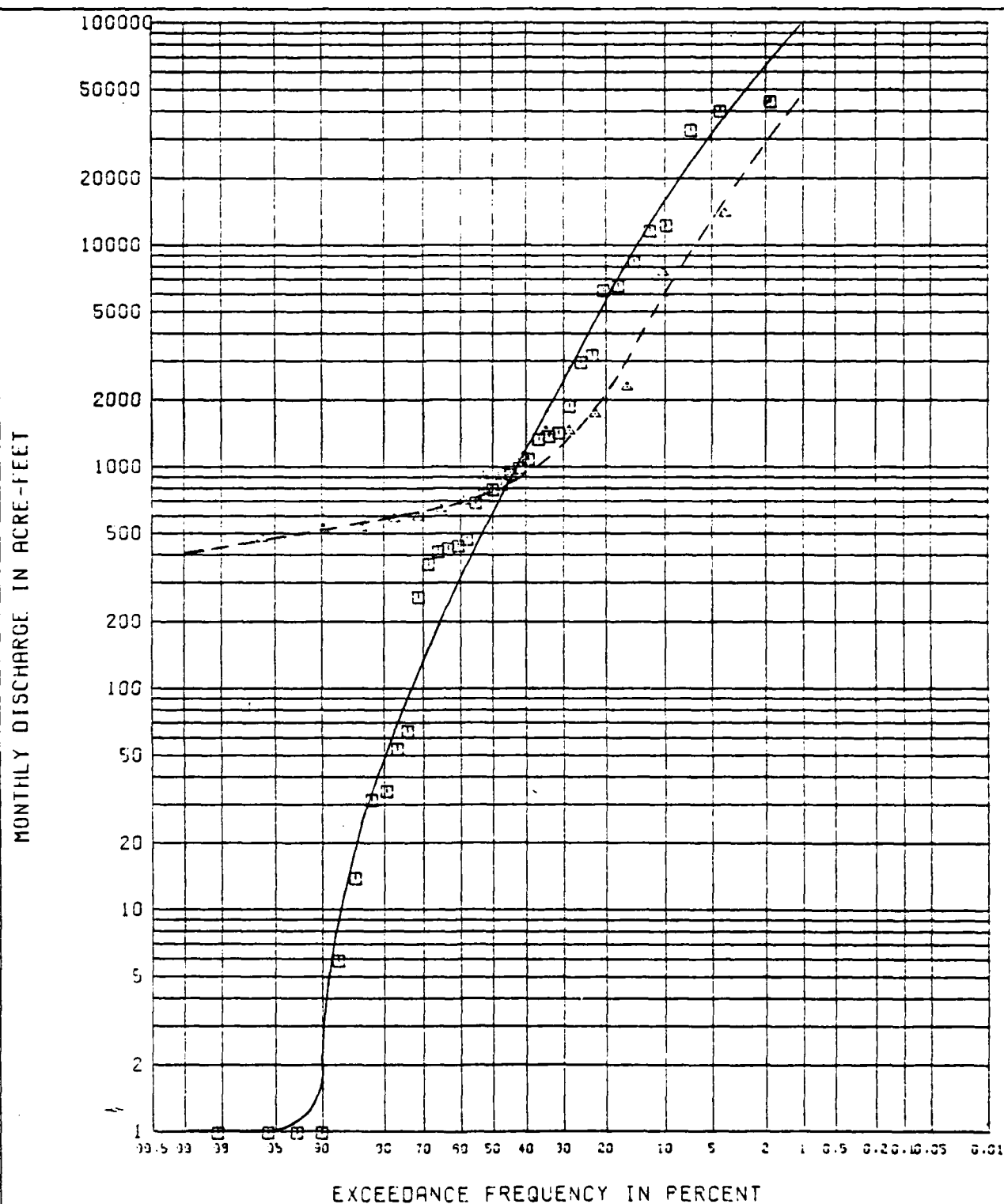
PROCTOR LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

AUGUST FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 8



LEGEND

— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1922-1959)

- - - POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1963-1979)

BRAZOS RIVER BASIN, TEXAS

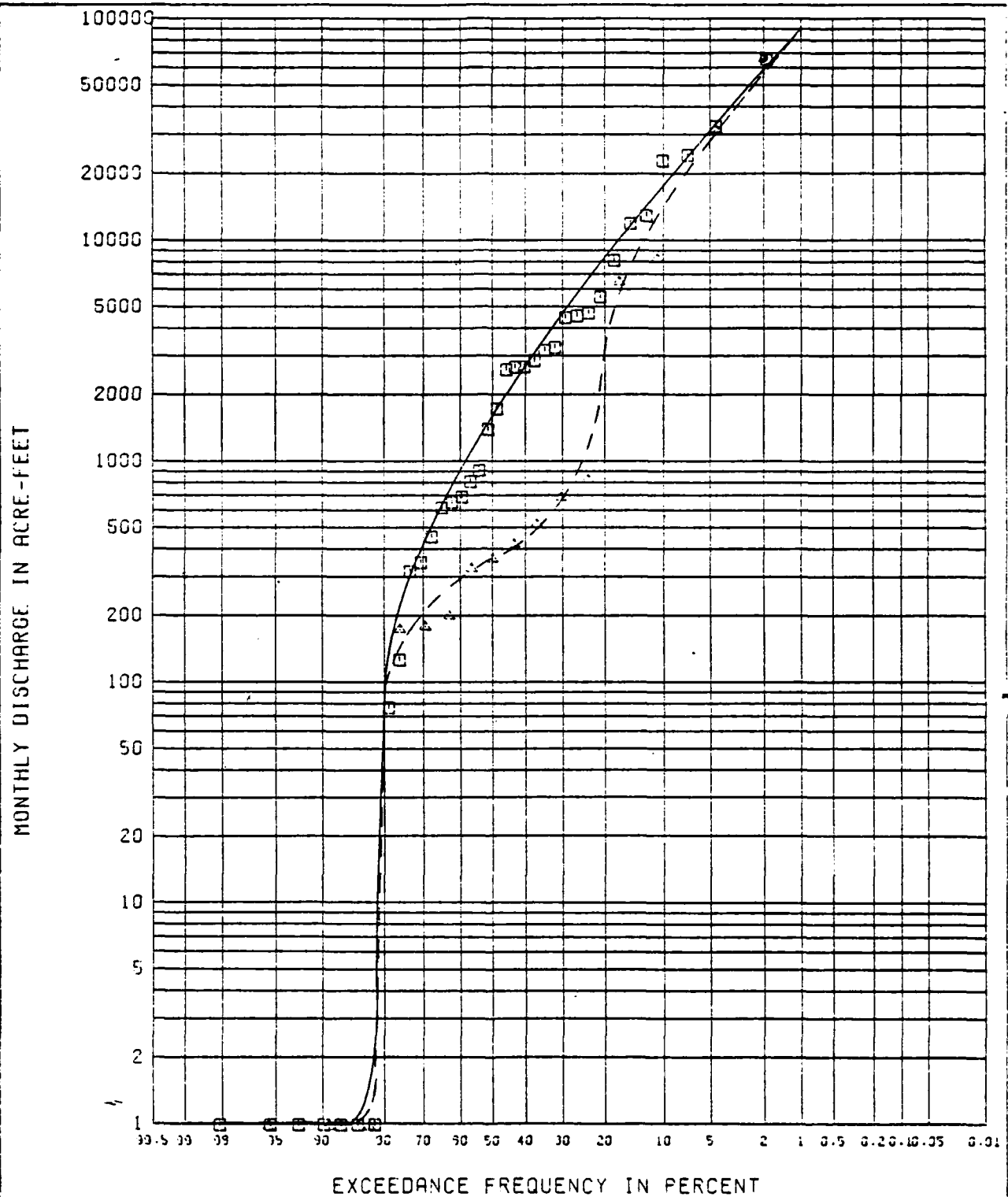
PROCTOR LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

SEPTEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 9



LEGEND

— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1922-1959)

- - - POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1963-1979)

BRAZOS RIVER BASIN, TEXAS

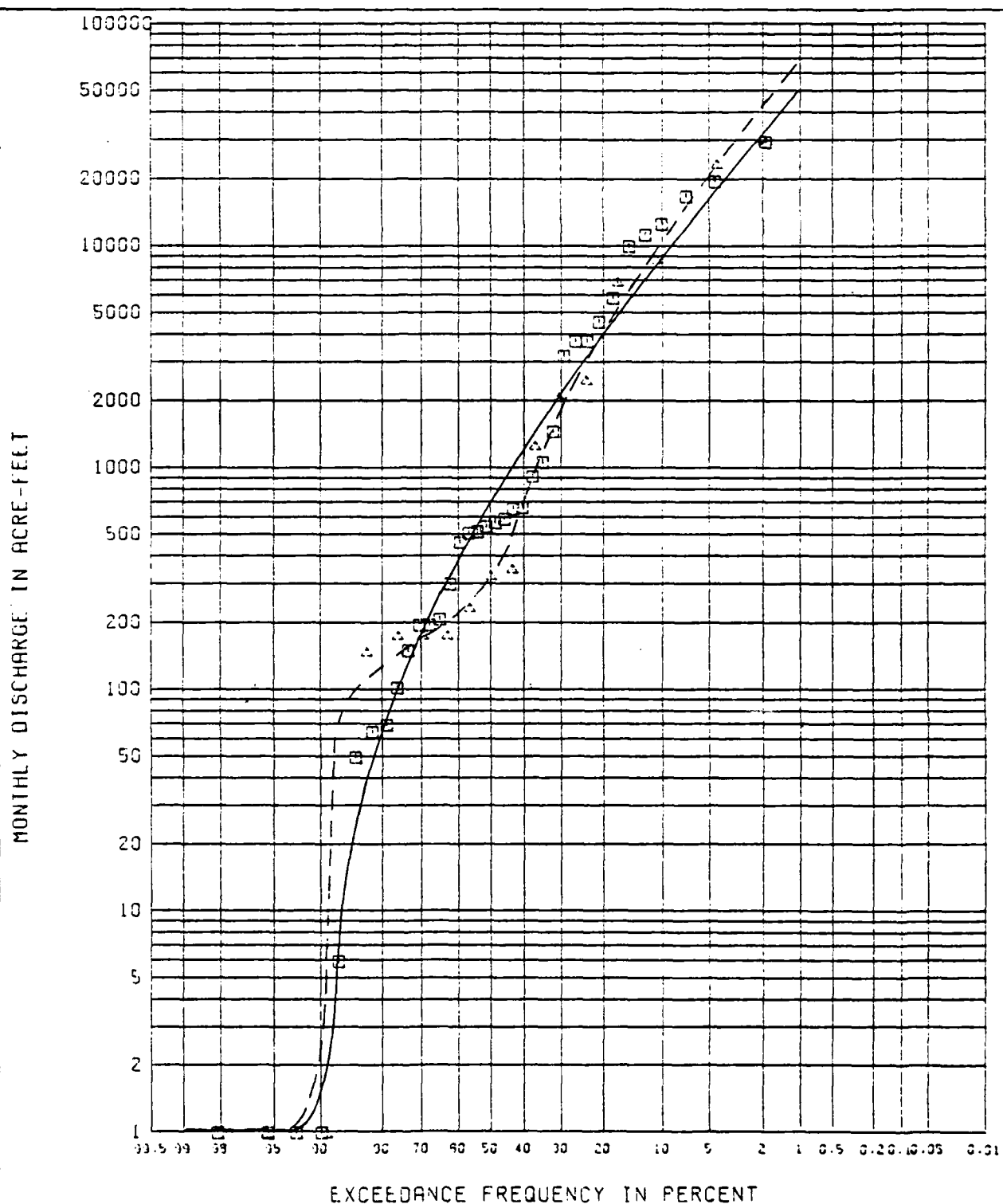
PROCTOR LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

OCTOBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 10



LEGEND

— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1922-1959)

- - - POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

BRAZOS RIVER BASIN, TEXAS

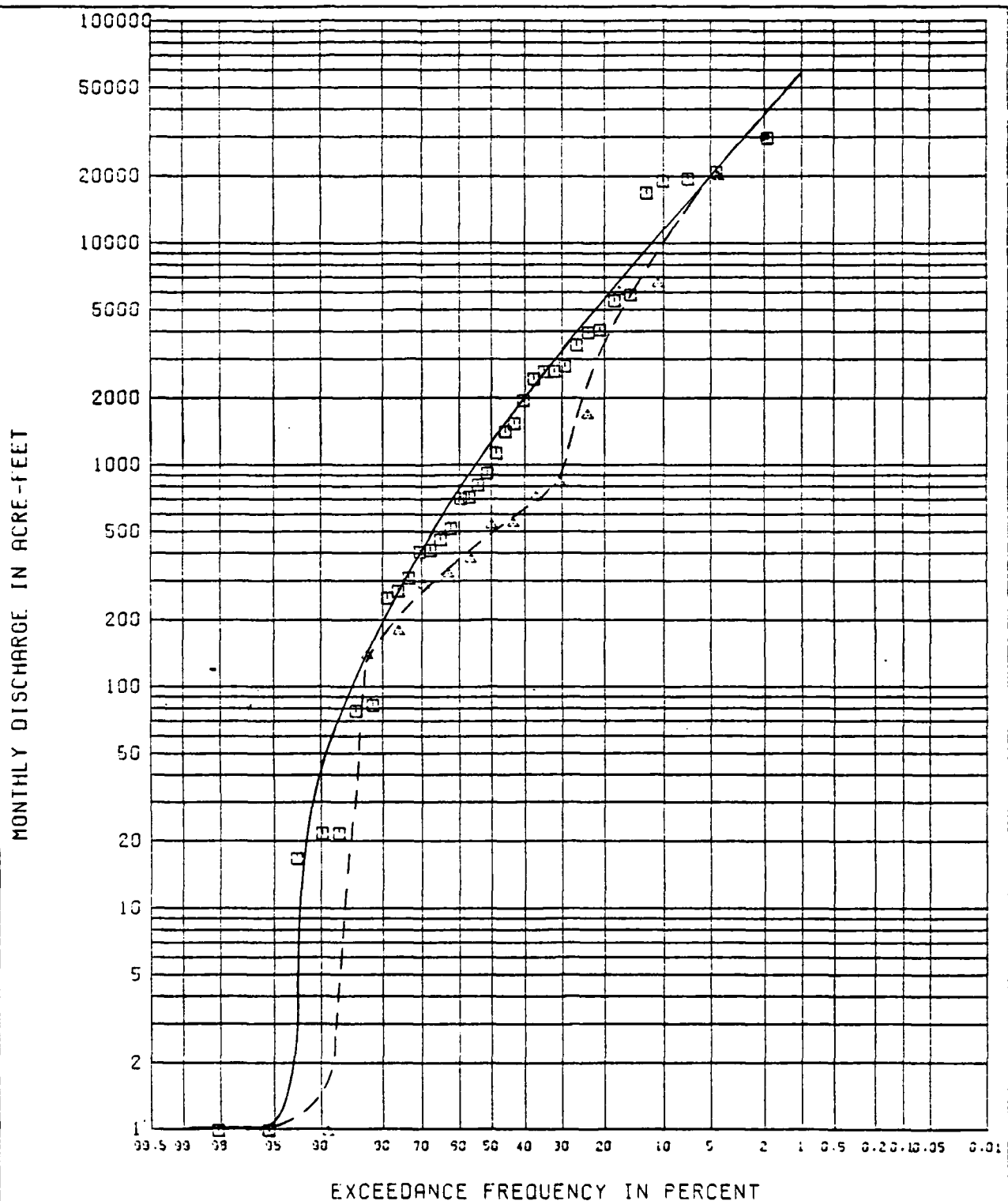
PROCTOR LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

NOVEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE II



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1922-1959)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1963-1979)

BRAZOS RIVER BASIN, TEXAS

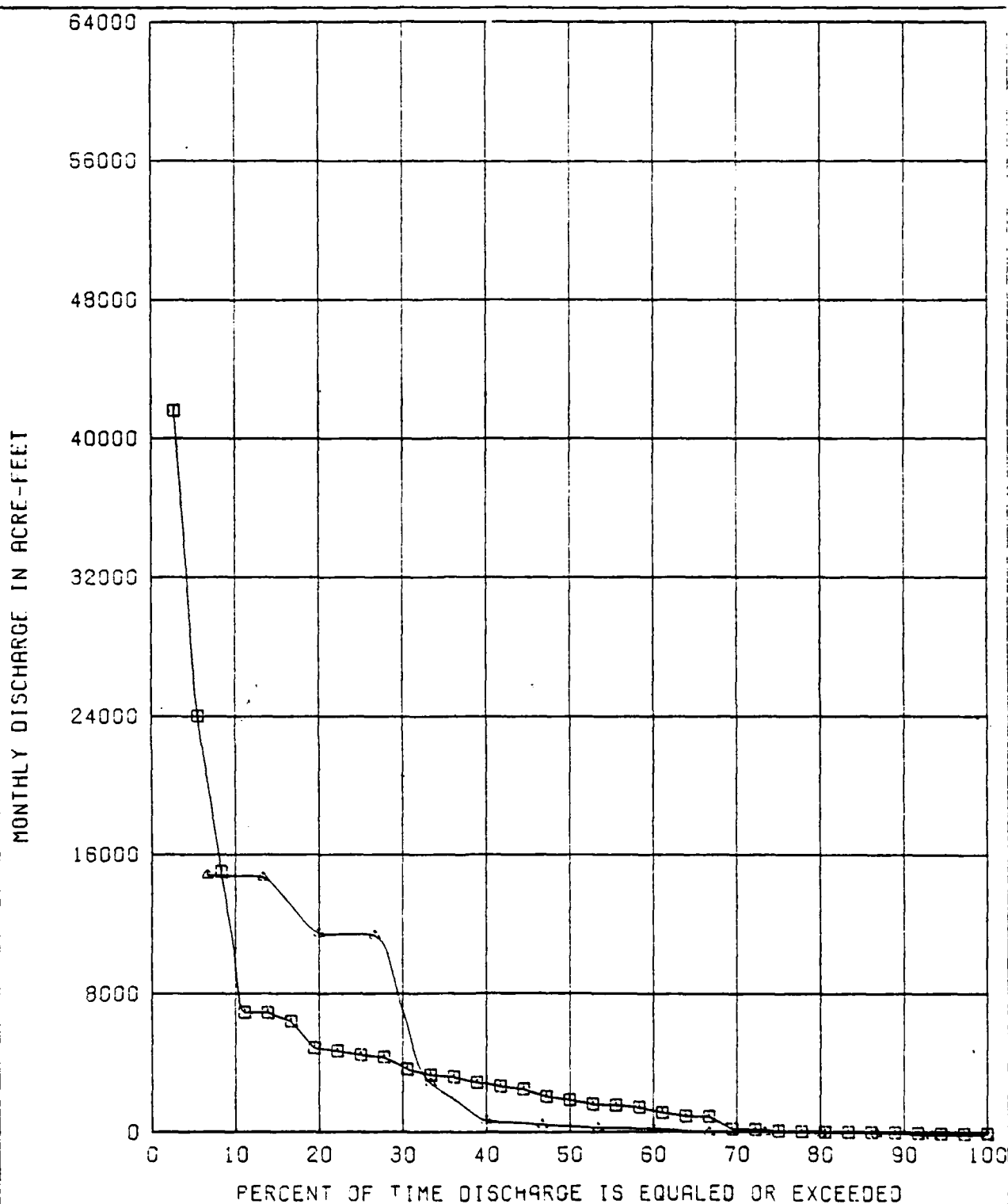
PROCTOR LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

DECEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 12



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1922-1959)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1963-1979)

BRAZOS RIVER BASIN, TEXAS

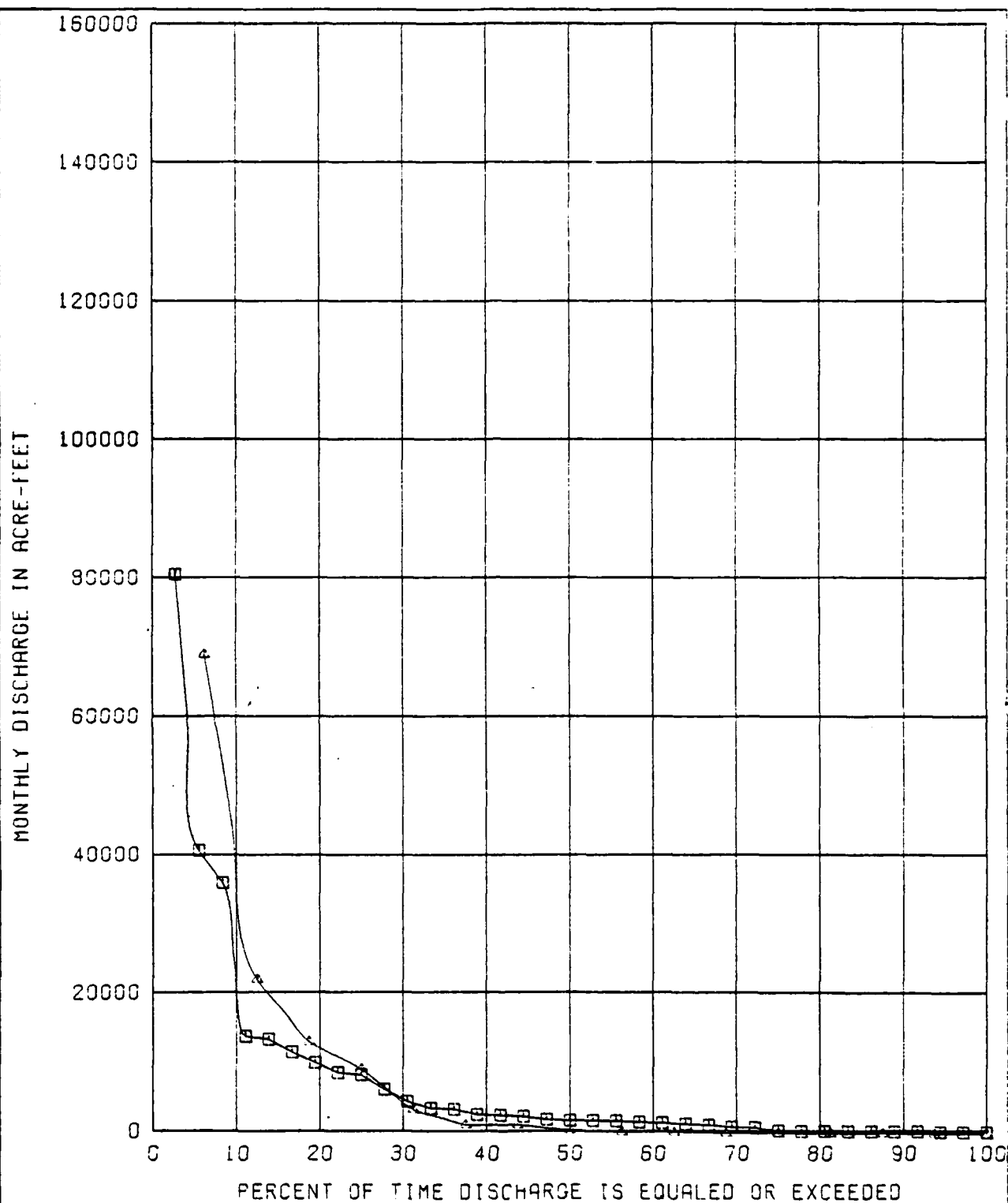
PROCTOR LAKE

FLOW DURATION CURVES AT DAM SITE

JANUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 13



LEGEND

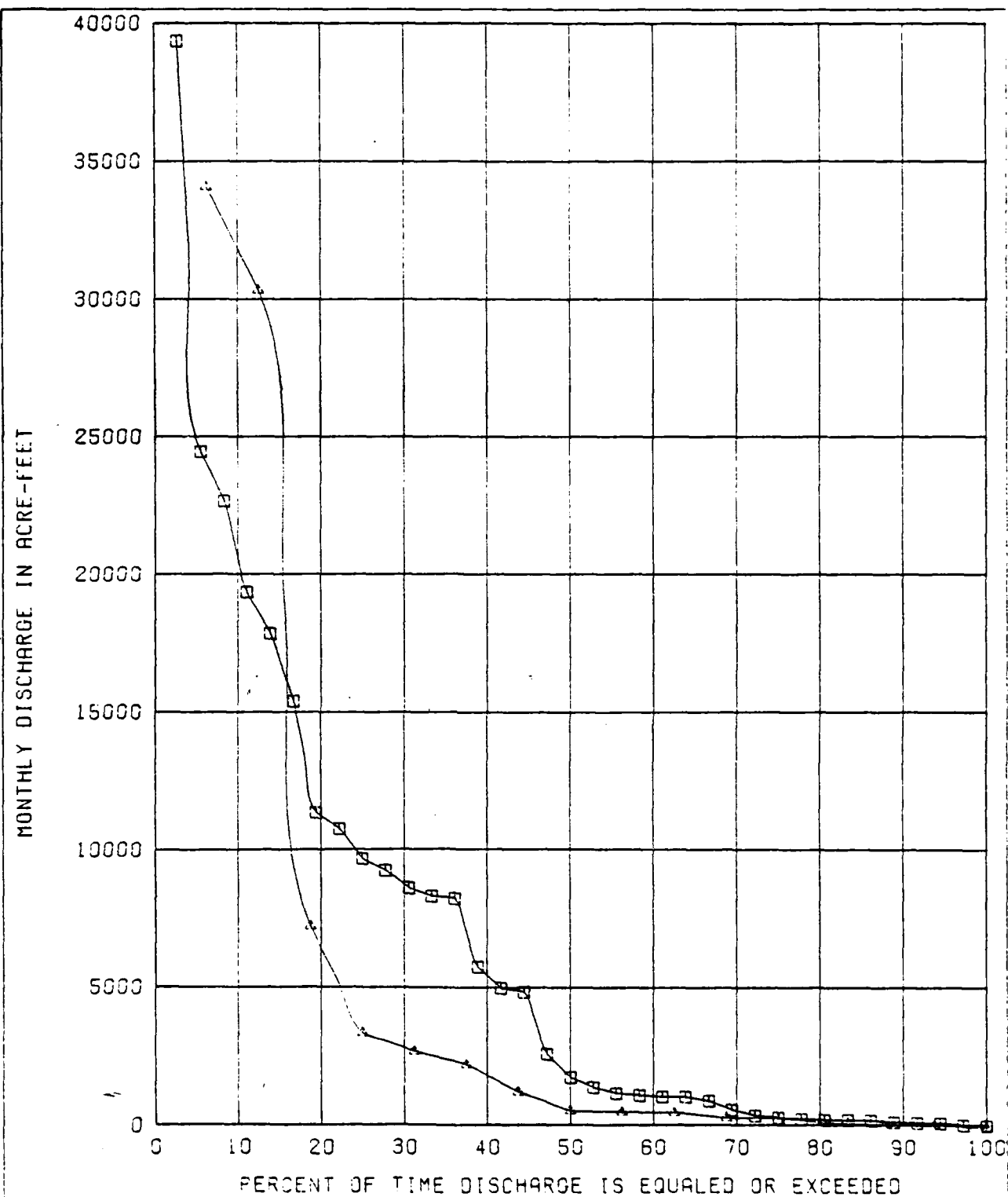
- — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1922-1959)
- △ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1963-1979)

BRAZOS RIVER BASIN, TEXAS
PROCTOR LAKE

FLOW DURATION CURVES AT DAM SITE
FEBRUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 14



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1922-1959)

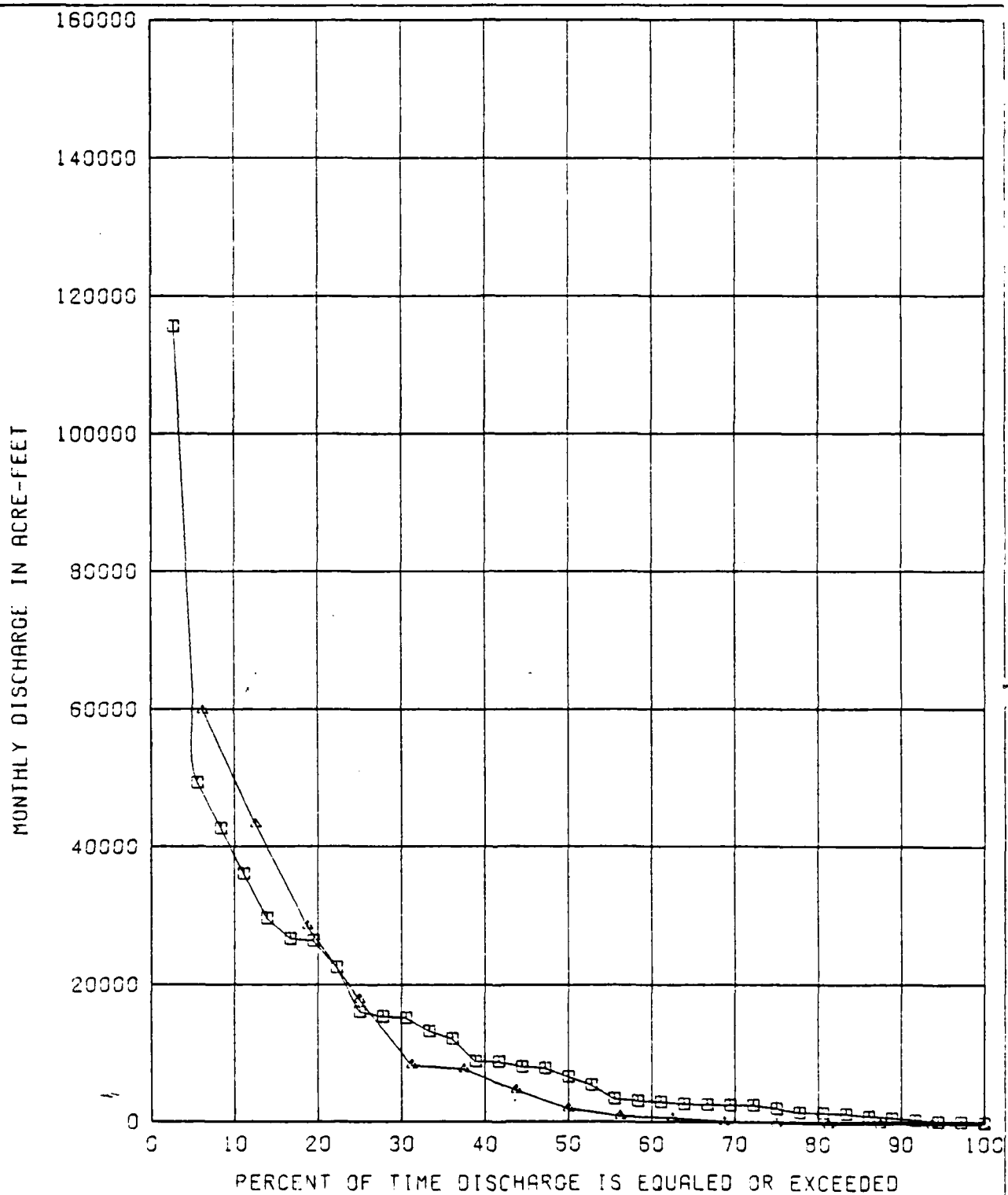
△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1963-1979)

BRAZOS RIVER BASIN, TEXAS
PROCTOR LAKE

FLOW DURATION CURVES AT DAM SITE
MARCH FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 15



LEGEND

□ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1922-1959)

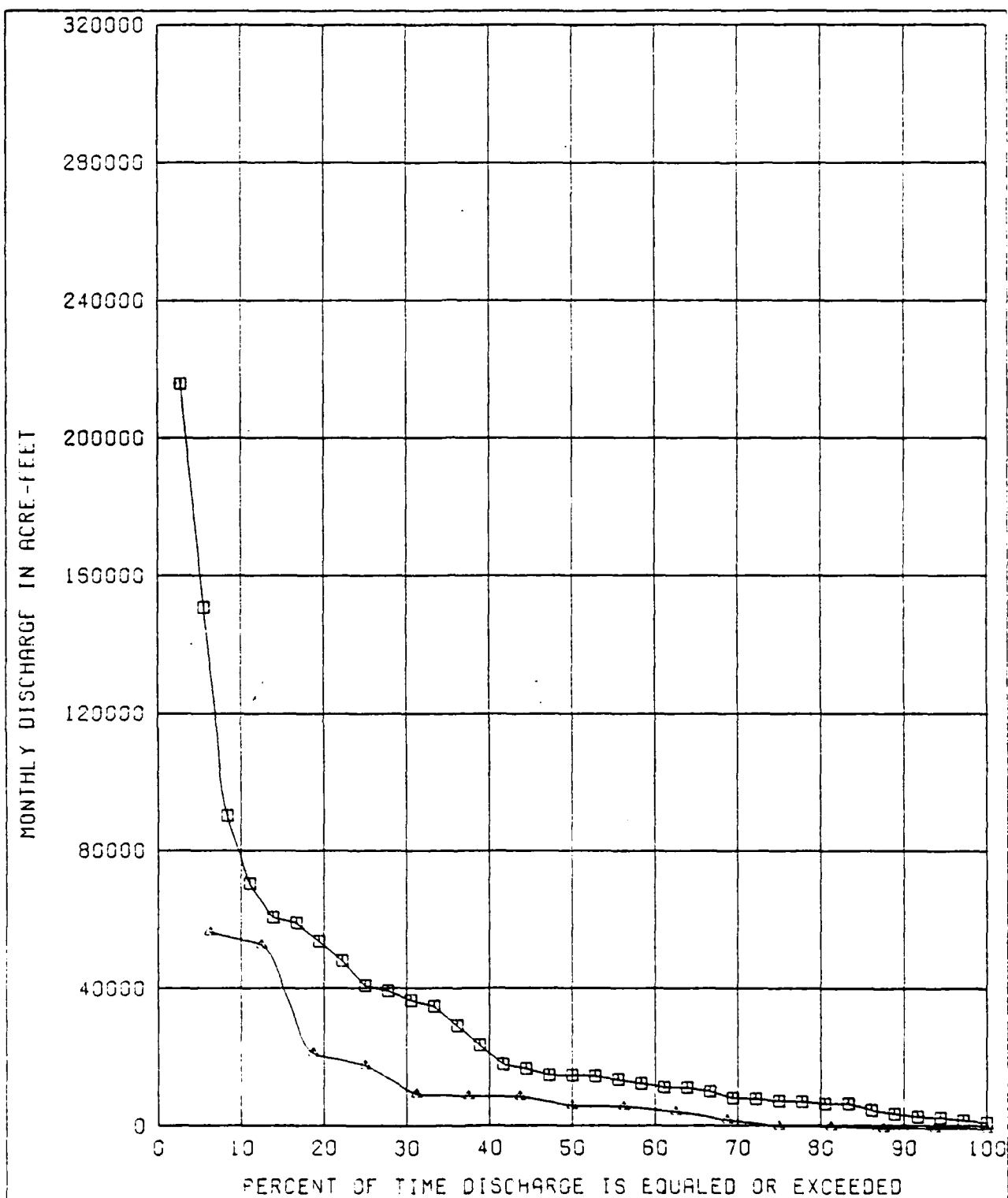
△ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

BRAZOS RIVER BASIN, TEXAS
PROCTOR LAKE

FLOW DURATION CURVES AT DAM SITE
APRIL FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 16



LEGEND

□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1922-1959)

△ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1963-1979)

BRAZOS RIVER BASIN, TEXAS

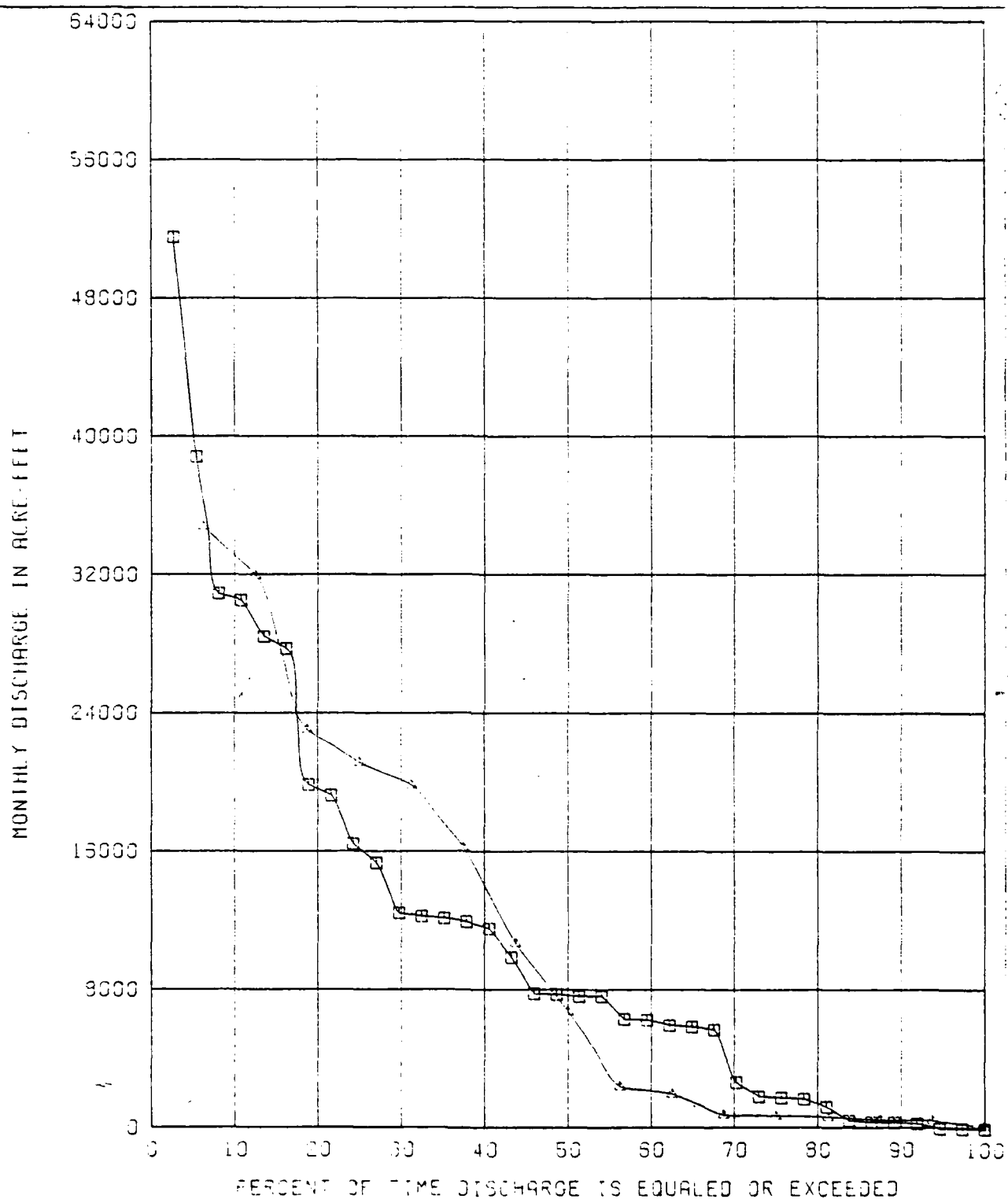
PROCTOR LAKE

FLOW DURATION CURVES AT DAM SITE

MAY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 17



LEGEND

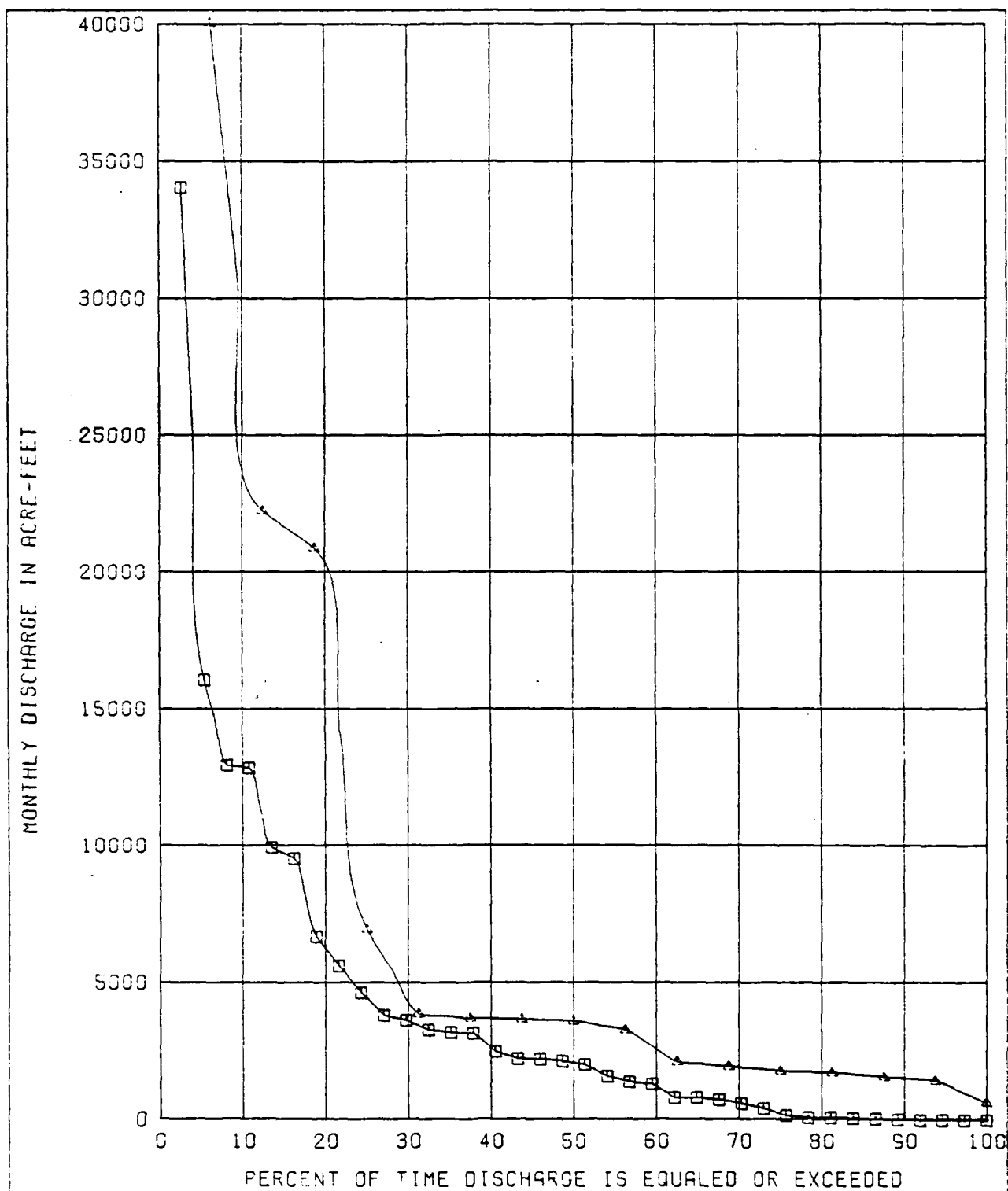
- — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1922-1959)
- △ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1963-1979)

BRAZOS RIVER BASIN, TEXAS
PROCTOR LAKE

FLOW DURATION CURVES AT DAM SITE
JUNE FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 18



LEGEND

□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1922-1959)

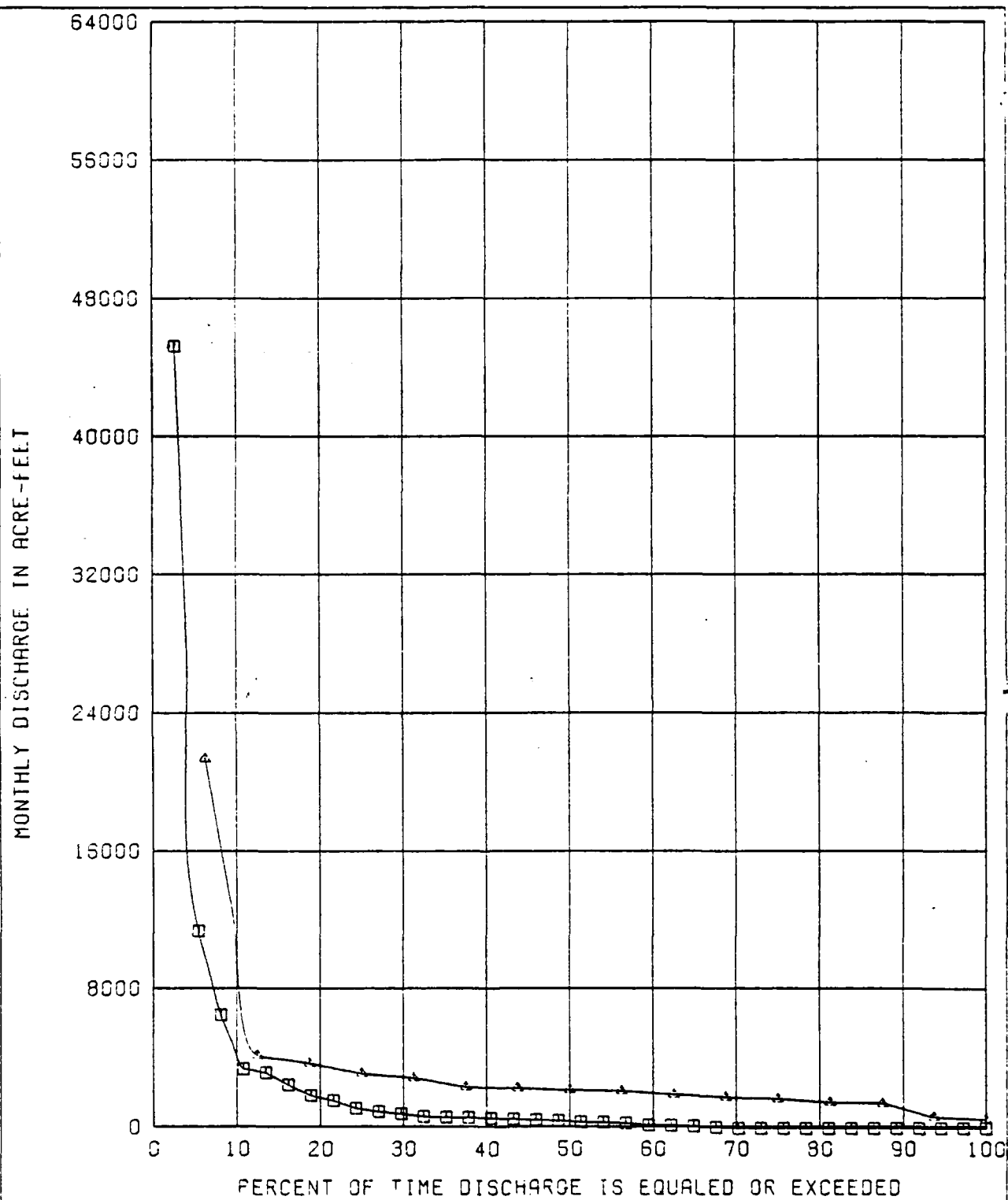
△ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1963-1979)

BRAZOS RIVER BASIN, TEXAS
PROCTOR LAKE

FLOW DURATION CURVES AT DAM SITE
JULY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 19



LEGEND

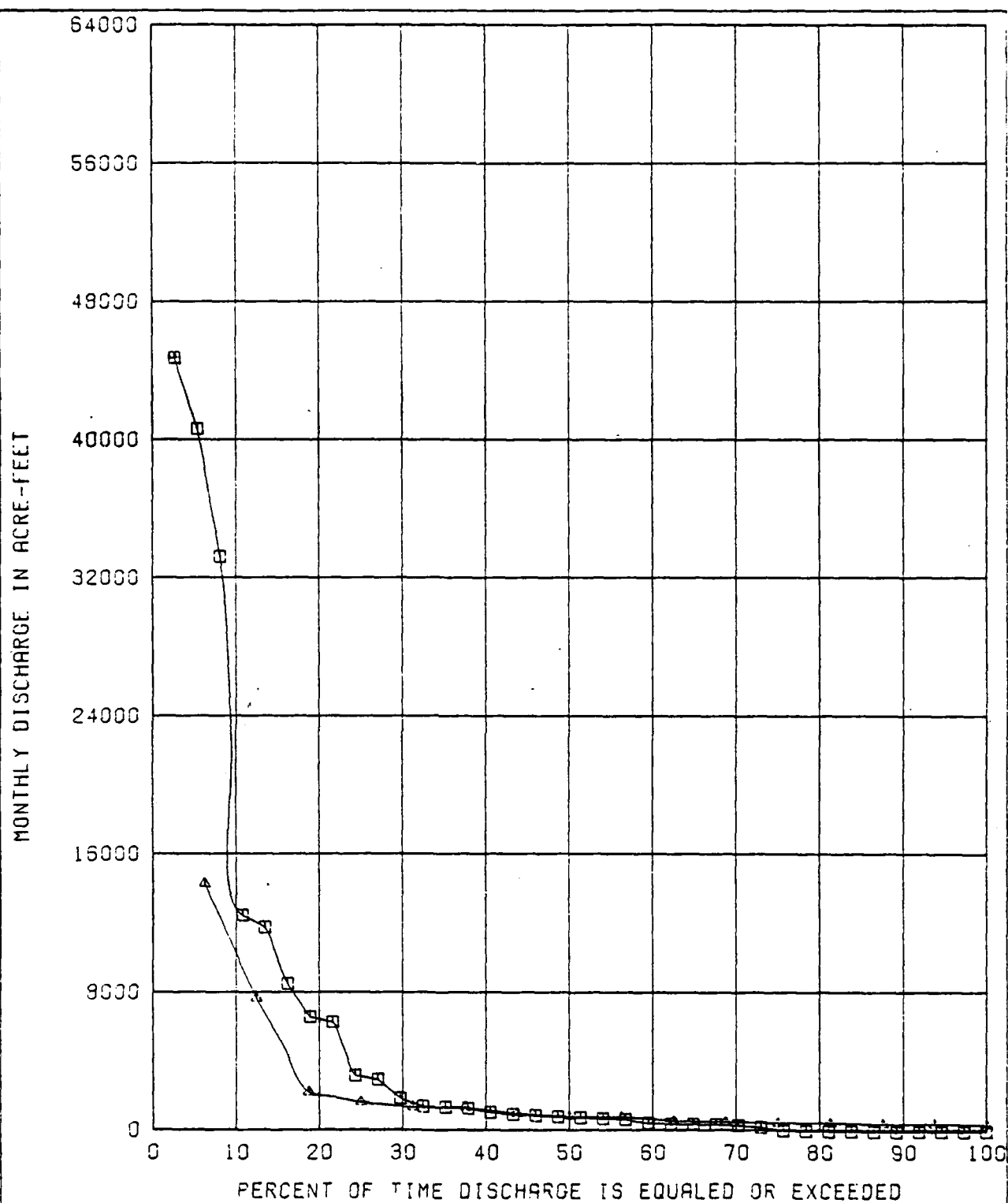
- — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1922-1959)
- △ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1963-1979)

BRAZOS RIVER BASIN, TEXAS
PROCTOR LAKE

FLOW DURATION CURVES AT DAM SITE
AUGUST FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 20



LEGEND

□ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1922-1959)

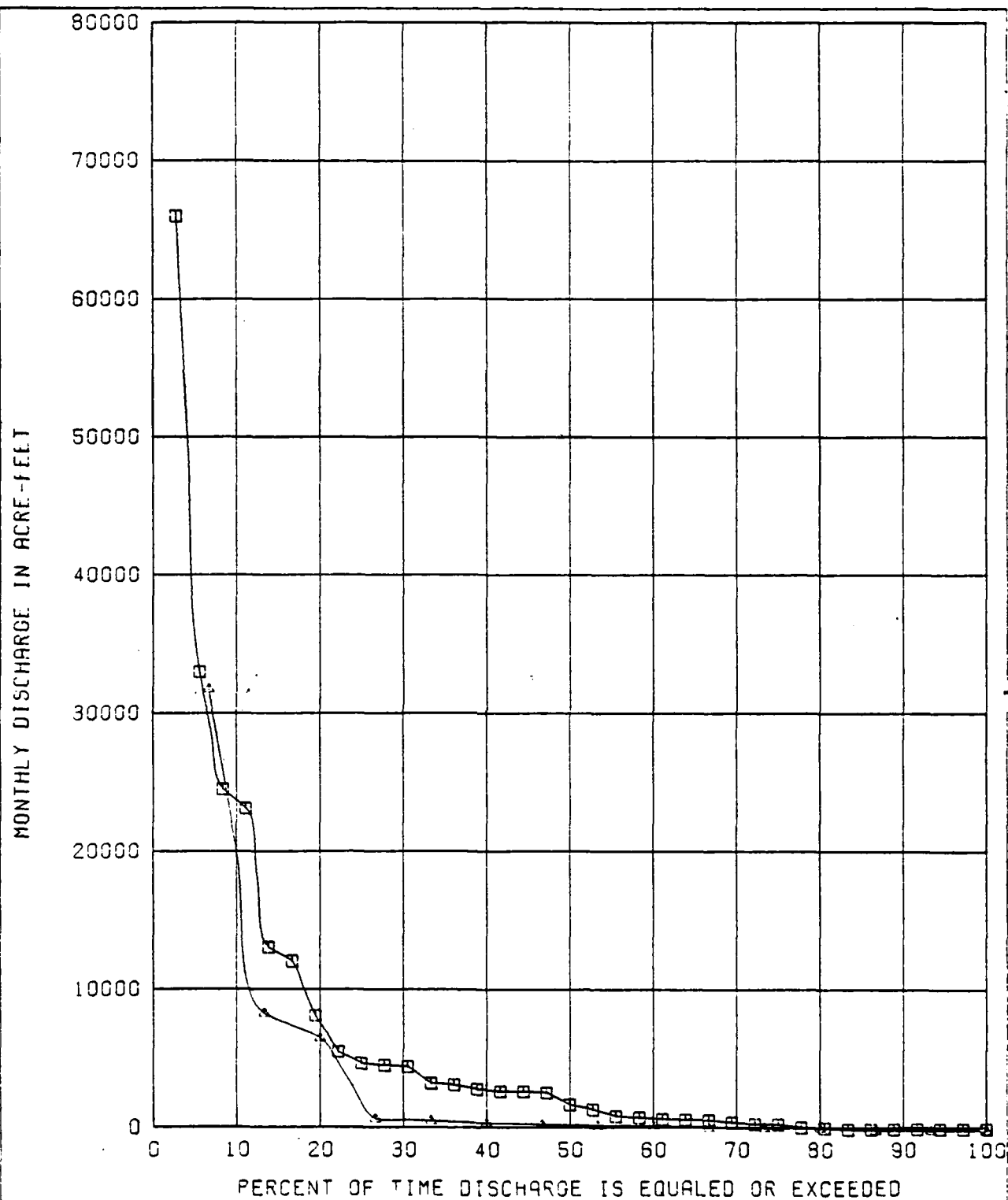
△ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

BRAZOS RIVER BASIN, TEXAS
PROCTOR LAKE

FLOW DURATION CURVES AT DAM SITE
SEPTEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 21



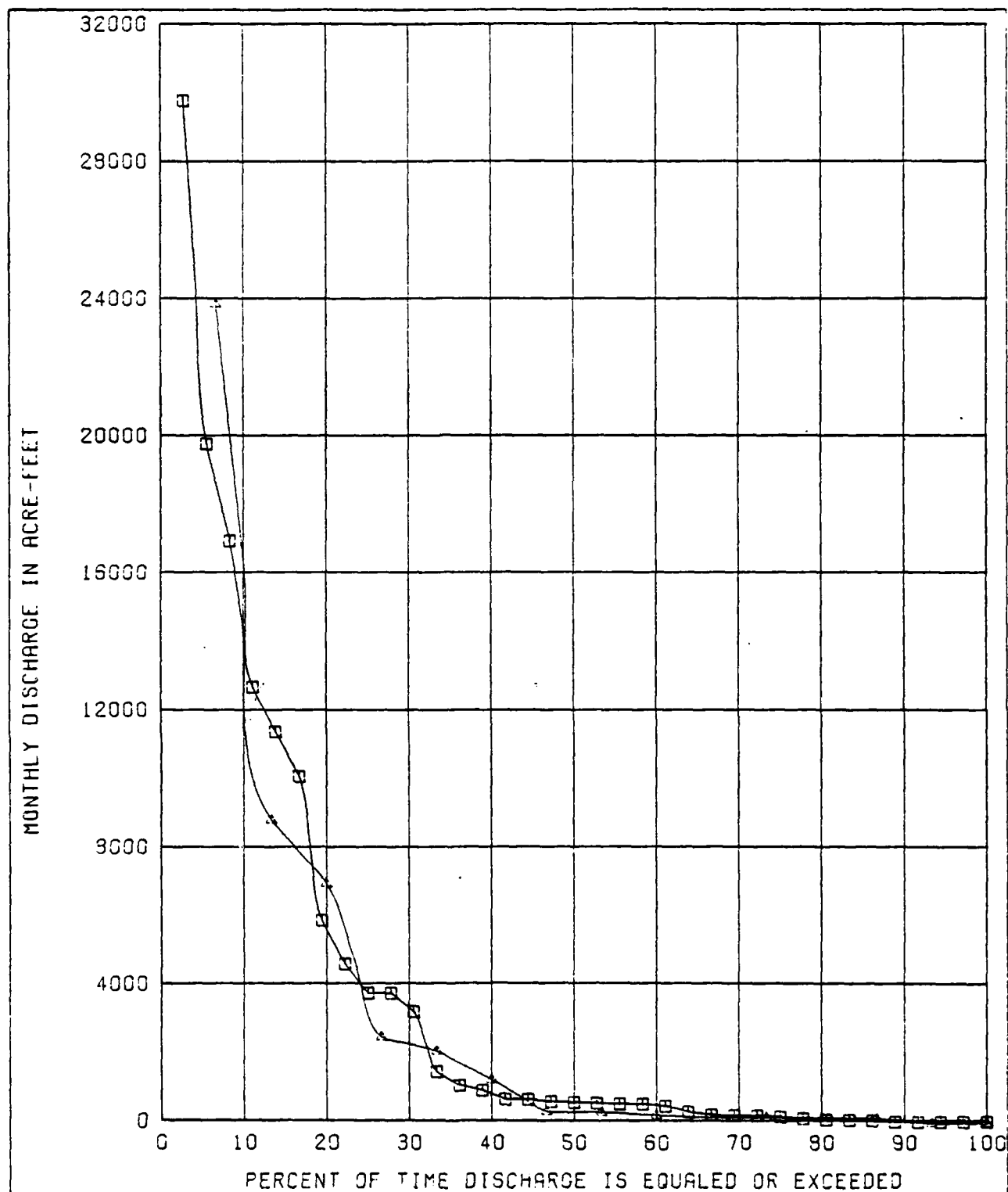
LEGEND

- — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1922-1959)
- △ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1963-1979)

BRAZOS RIVER BASIN, TEXAS
PROCTOR LAKE

FLOW DURATION CURVES AT DAM SITE
OCTOBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980



LEGEND

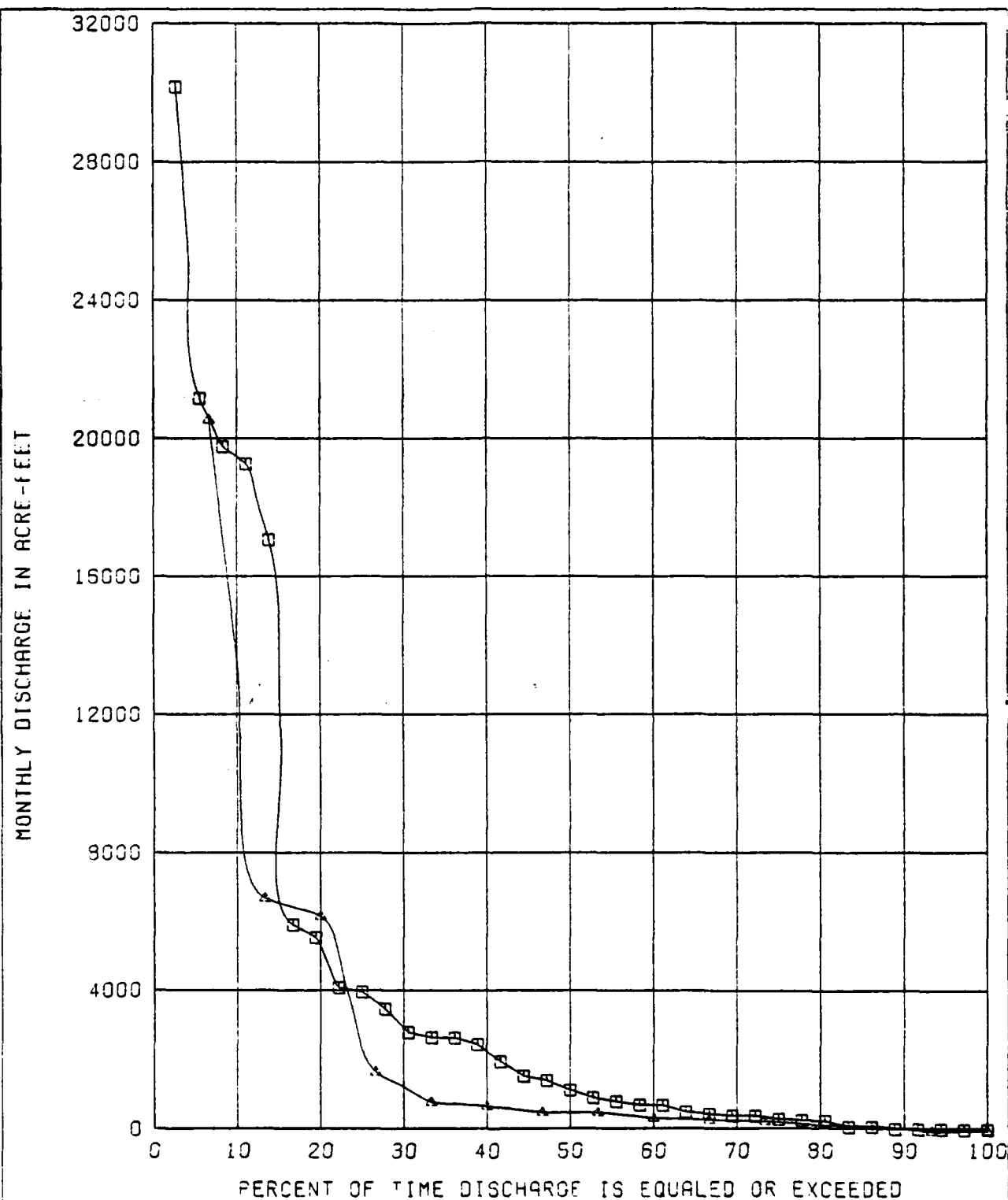
- PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1922-1959)
- △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1963-1979)

BRAZOS RIVER BASIN, TEXAS
PROCTOR LAKE

FLOW DURATION CURVES AT DAM SITE
NOVEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 23



LEGEND

□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1922-1959)

▲ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1963-1979)

BRAZOS RIVER BASIN, TEXAS

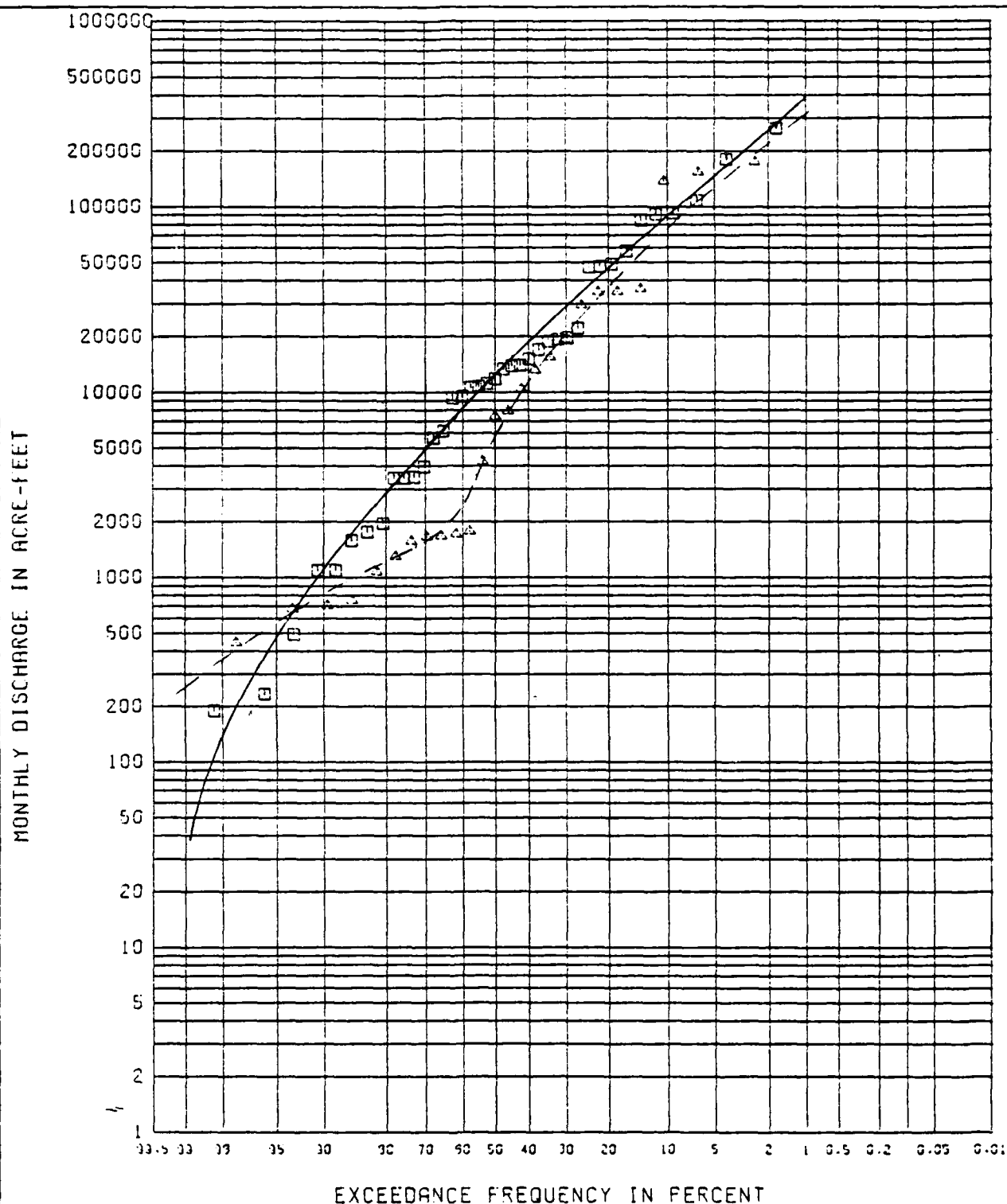
PROCTOR LAKE

FLOW DURATION CURVES AT DAM SITE

DECEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 24



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1909-1949)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

BRAZOS RIVER BASIN, TEXAS

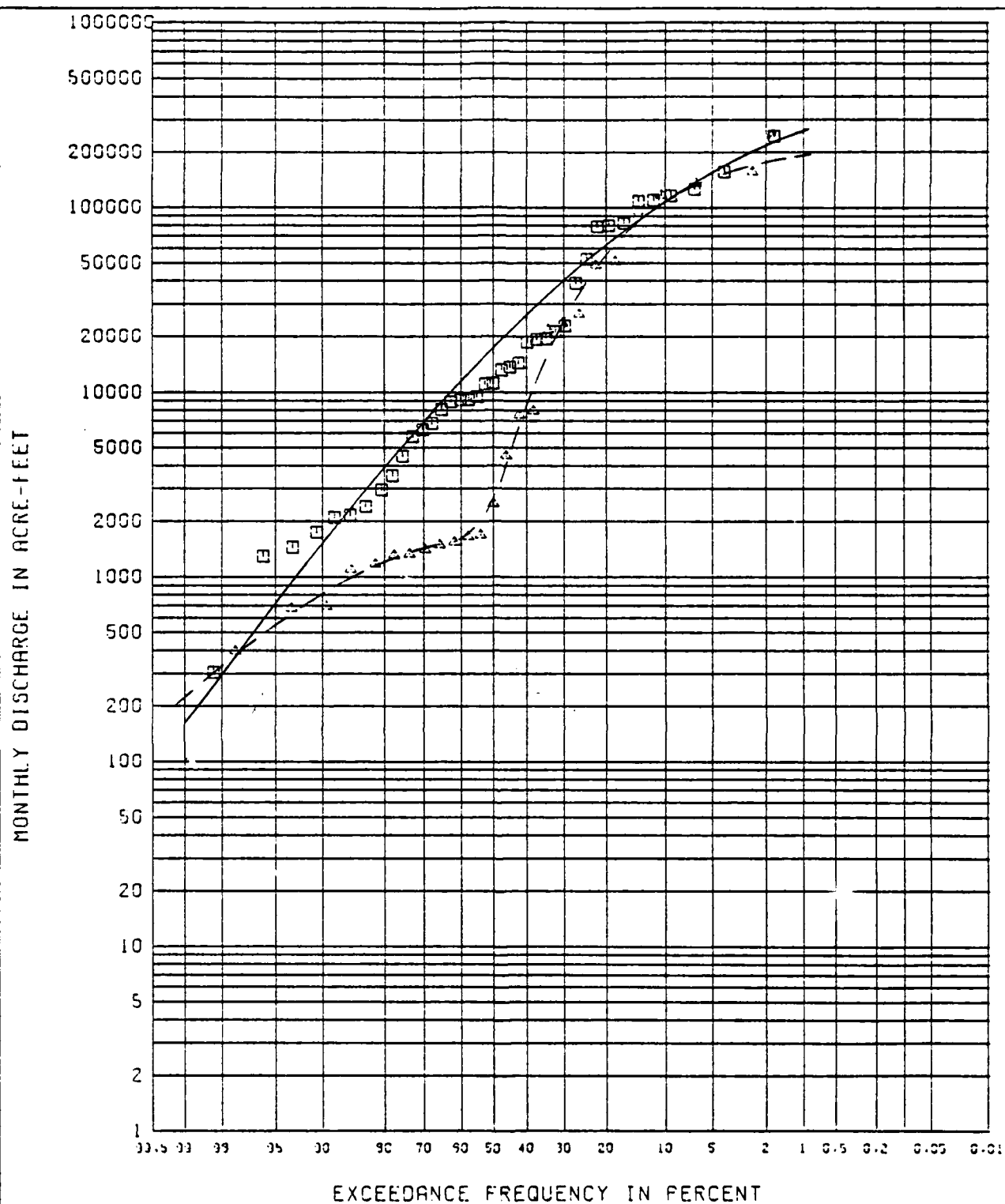
SELTON RESERVOIR

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

JANUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE I



LEGEND

- — □ PRE-IMPOUNDMENT CONDITIONS
 (PERIOD OF RECORD 1909-1949)
- △ — △ POST-IMPOUNDMENT CONDITIONS
 (PERIOD OF RECORD 1953-1979)

BRAZOS RIVER BASIN, TEXAS

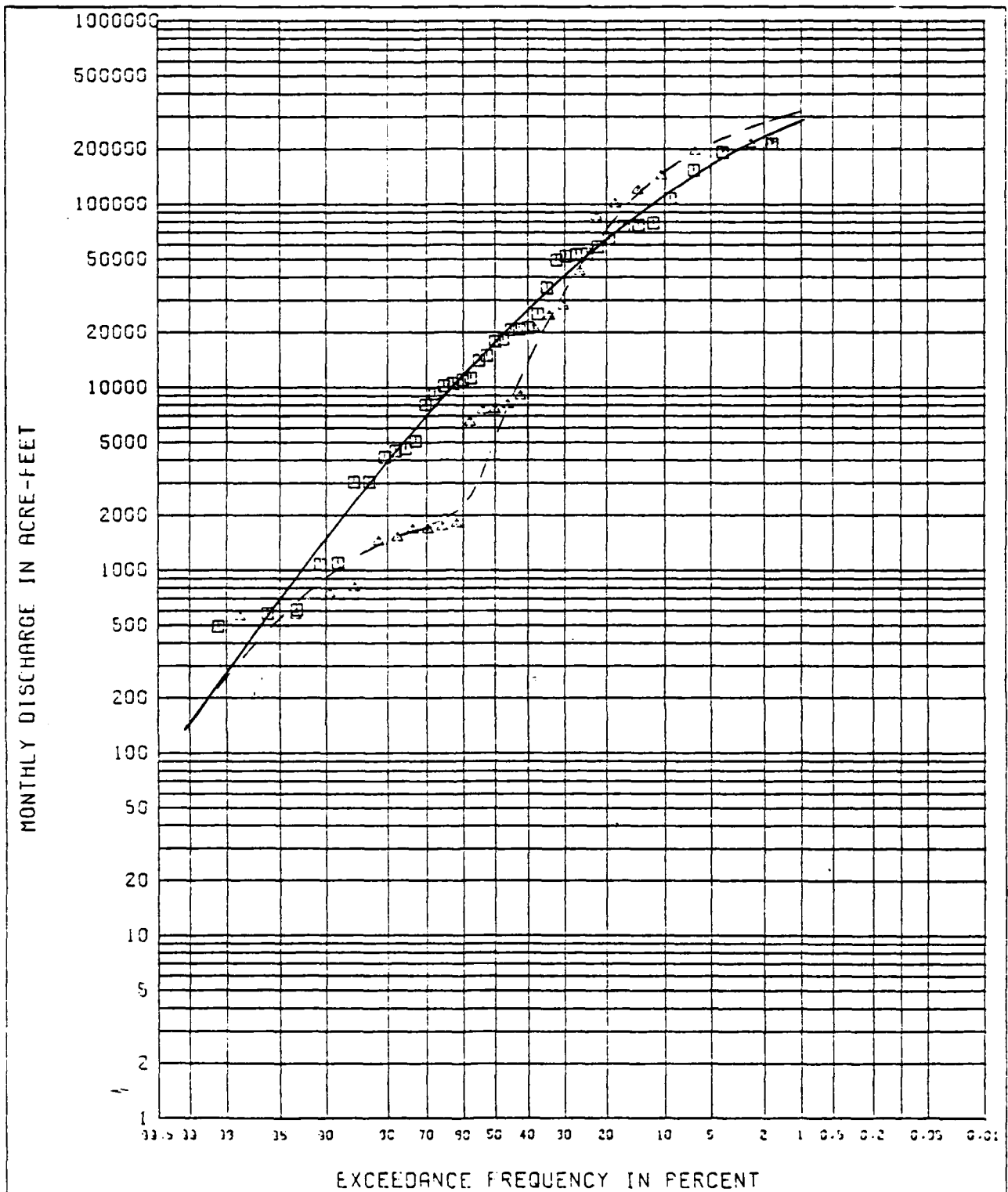
BELTON RESERVOIR

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

FEBRUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
 TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
 EVALUATION REPORT OF DECEMBER 1990

PLATE 2



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1909-1949)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

BRAZOS RIVER BASIN, TEXAS

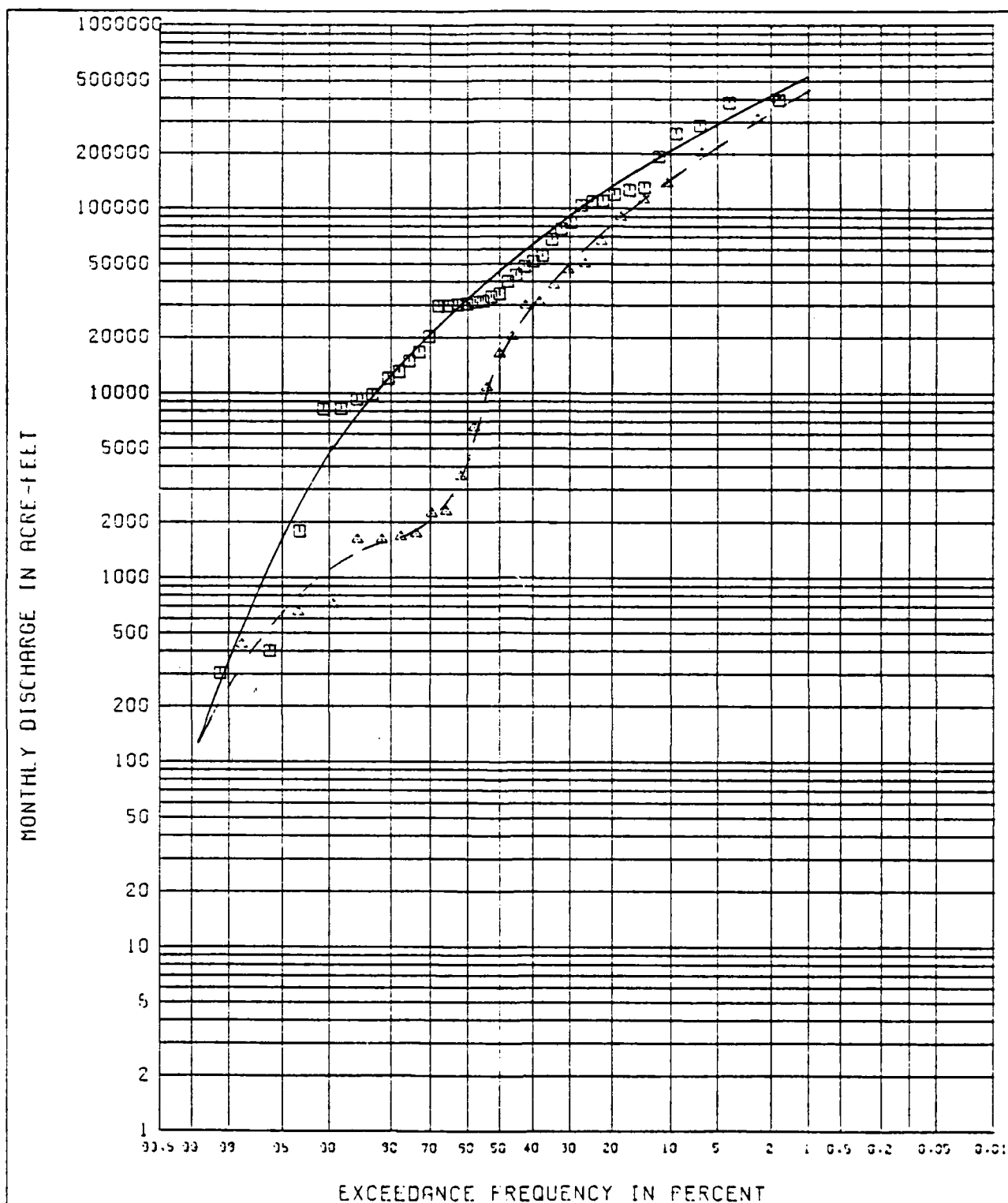
BELTON RESERVOIR

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

MARCH FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 3



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1909-1945)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1955-1979)

BRAZOS RIVER BASIN, TEXAS

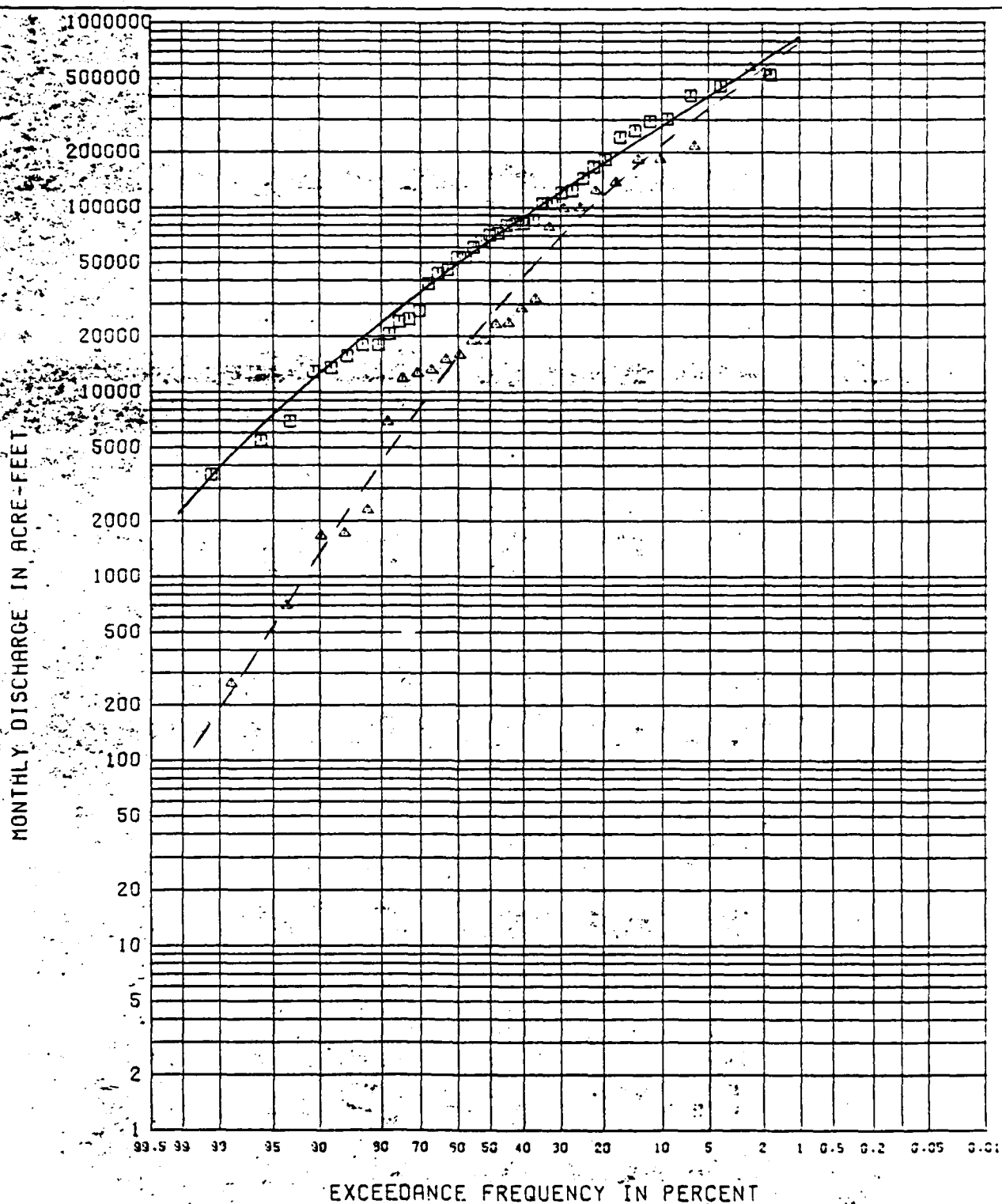
BELTON RESERVOIR

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

APRIL FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 4



LEGEND

□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1909-1946)

△ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

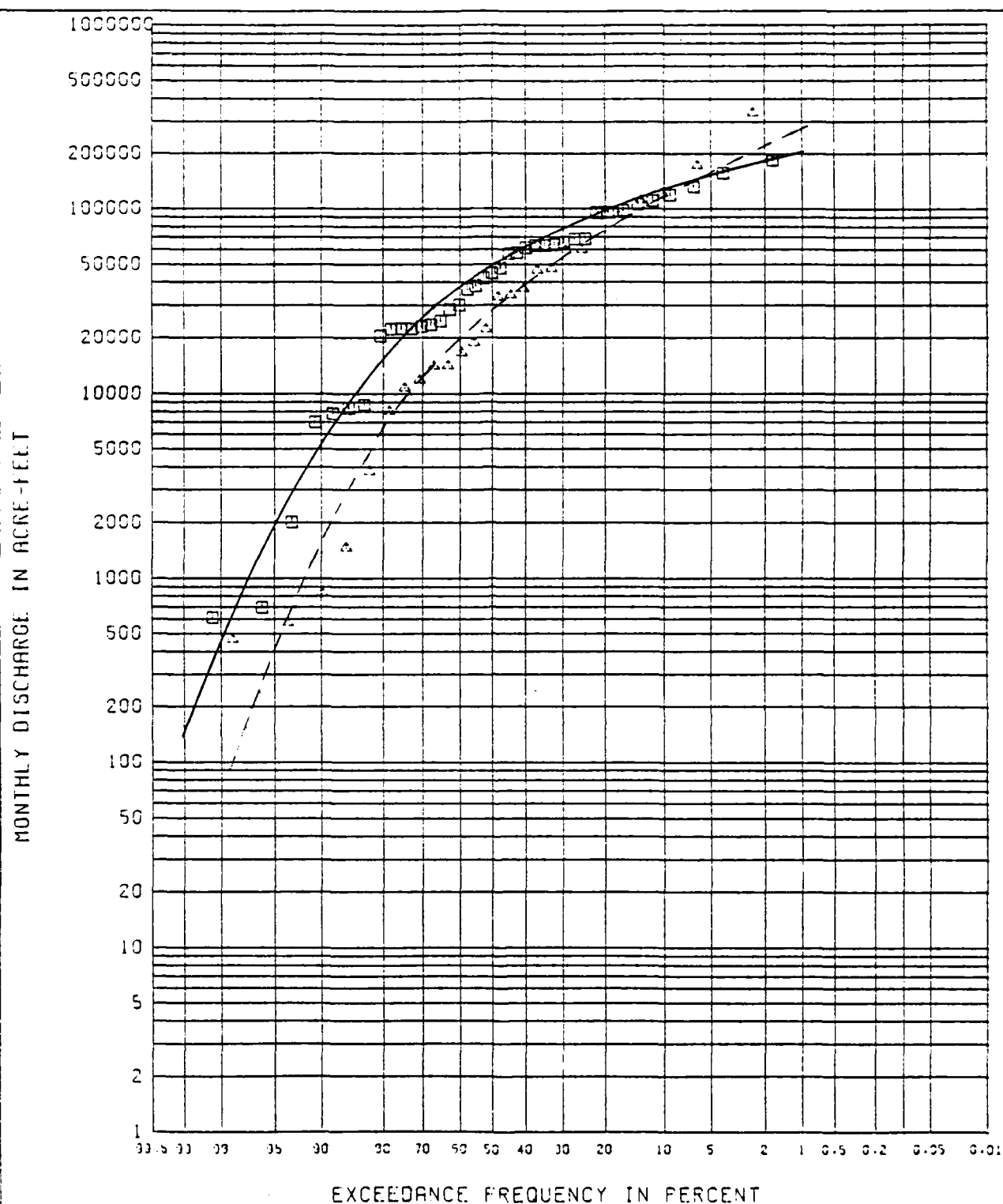
BRAZOS RIVER BASIN, TEXAS

BELTON RESERVOIR

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
MAY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 5



LEGEND

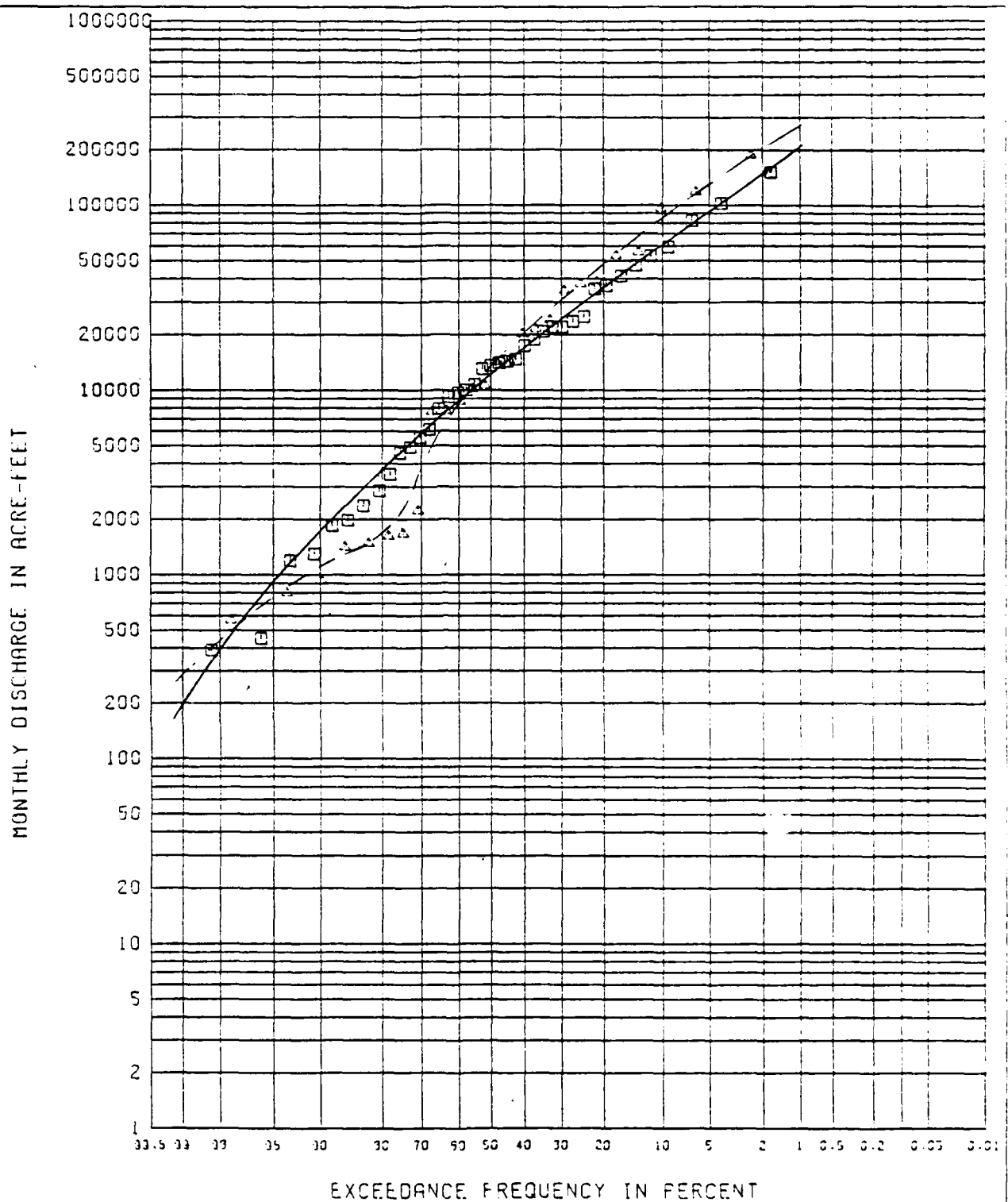
—□— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1903-1949)

—△— POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

BRAZOS RIVER BASIN, TEXAS
BELTON RESERVOIR
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
JUNE FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 6



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1903-1949)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

BRAZOS RIVER BASIN, TEXAS

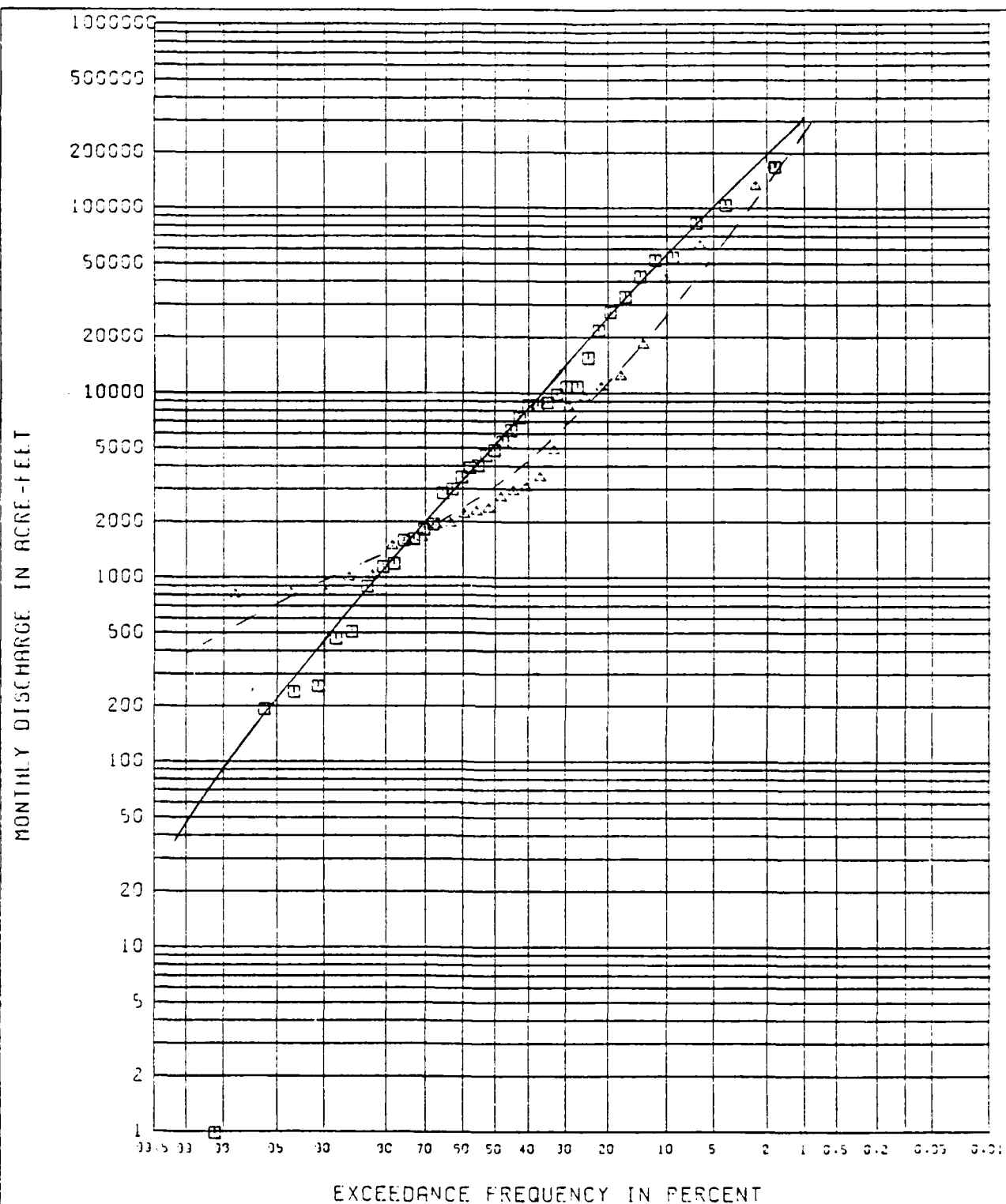
BELTON RESERVOIR

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

JULY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 7



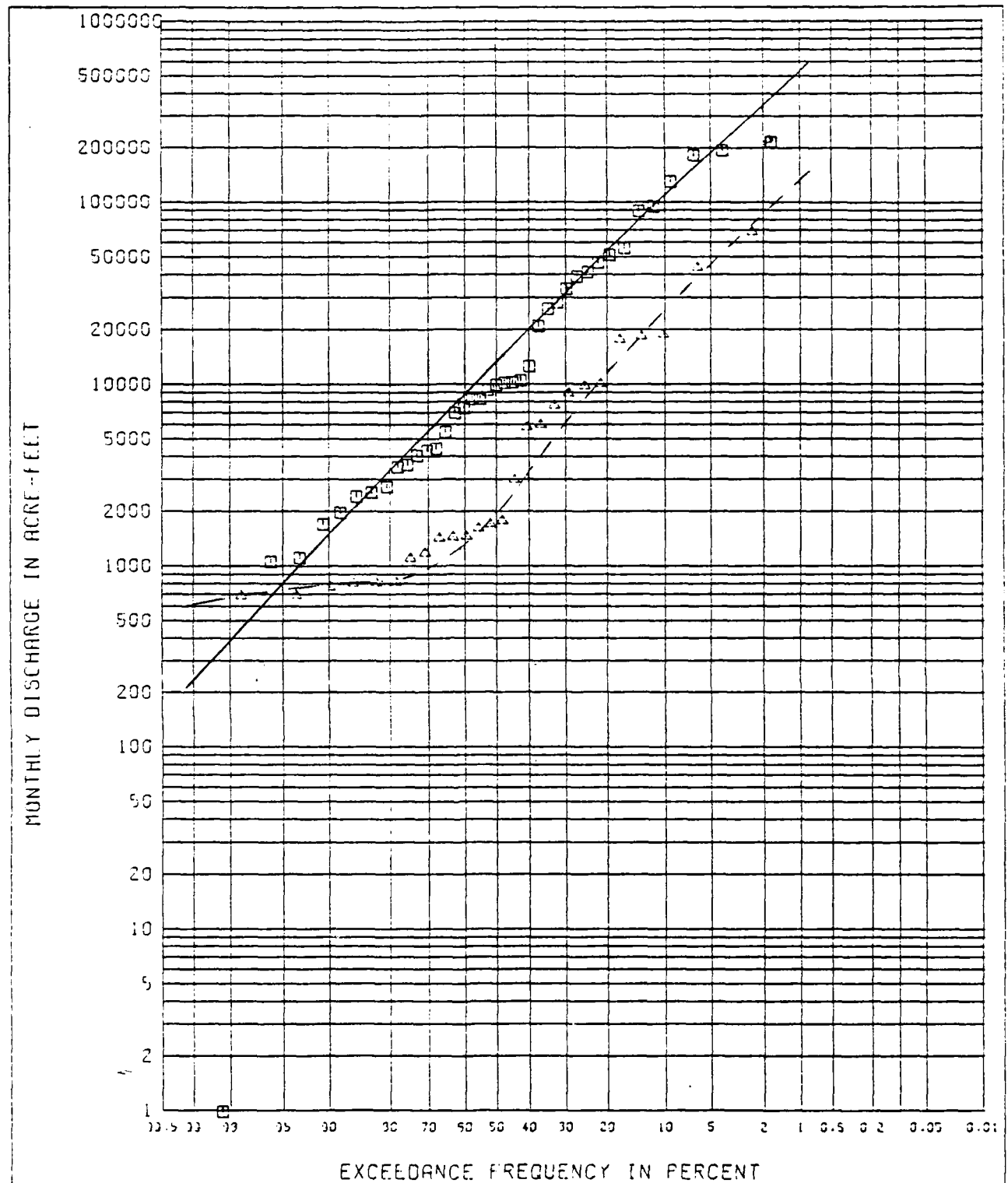
LEGEND

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(PERIOD OF RECORD 1900-1949)
- △ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1950-1979)

BRAZOS RIVER BASIN, TEXAS
BELTON RESERVOIR
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
AUGUST FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 8



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1909-1915)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1973)

BRAZOS RIVER BASIN, TEXAS

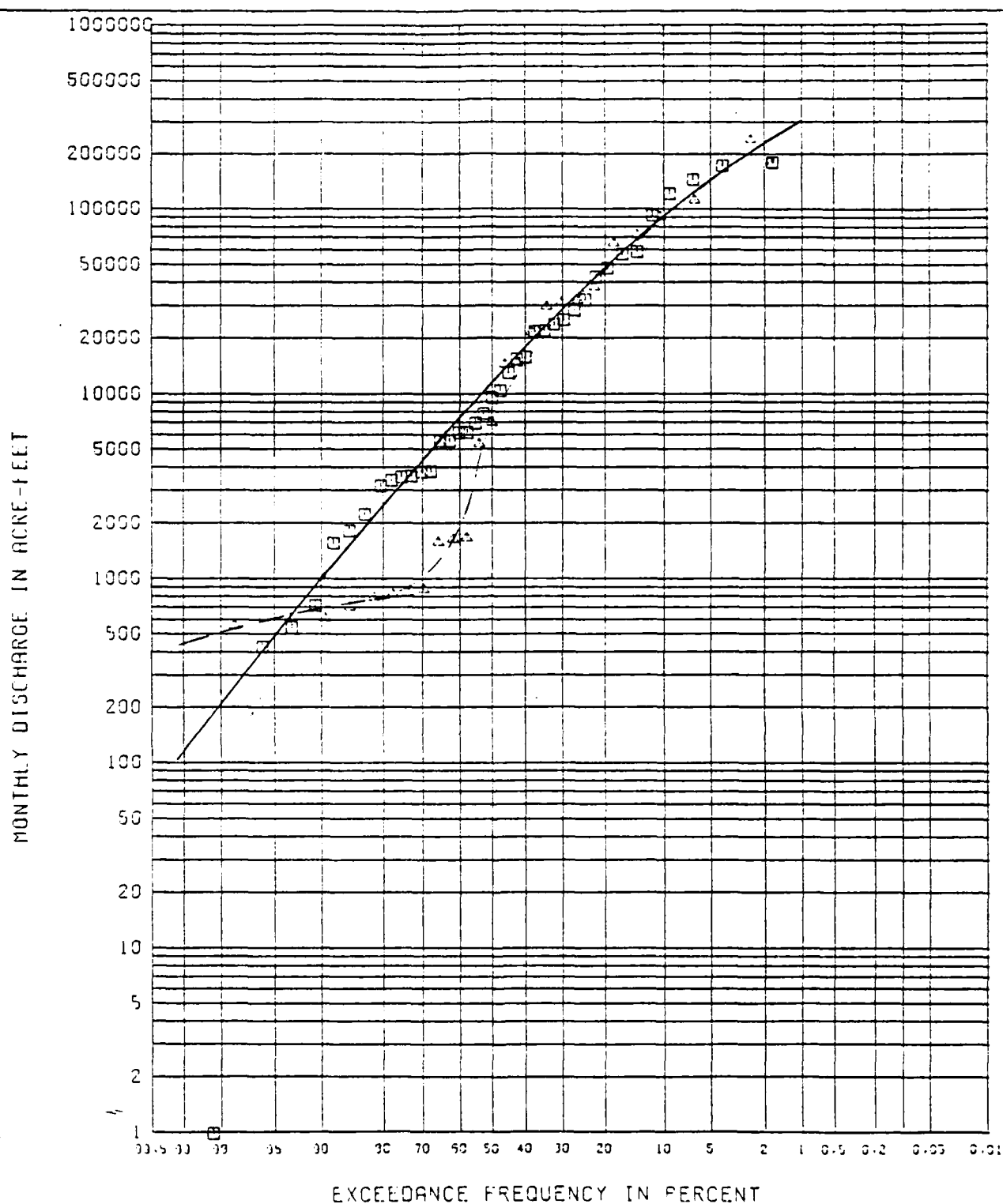
BELTON RESERVOIR

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

SEPTEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 9



LEGEND

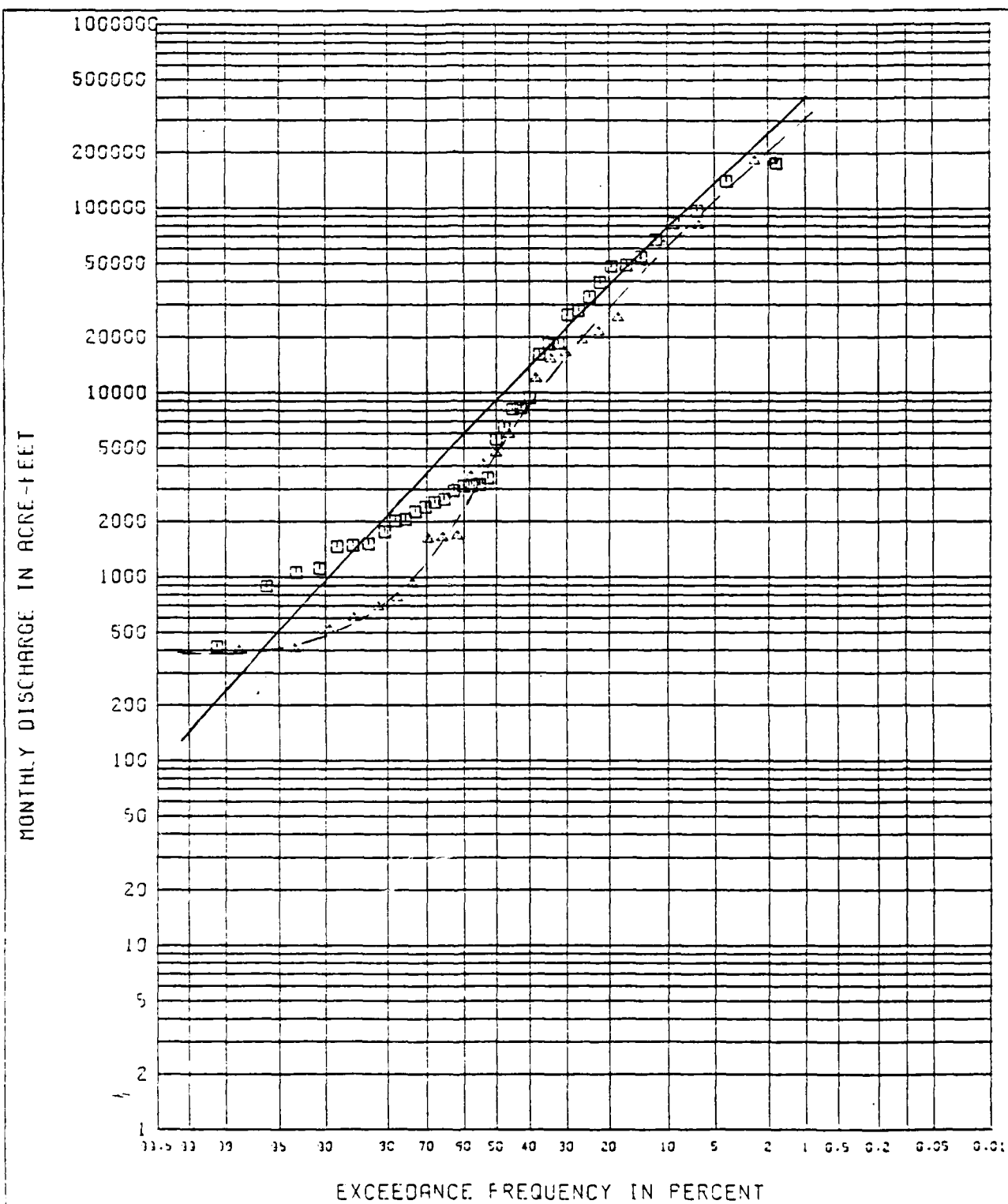
□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1903-1915)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

BRAZOS RIVER BASIN, TEXAS
BELTON RESERVOIR
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
OCTOBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 10



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1909-1949)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

BRAZOS RIVER BASIN, TEXAS

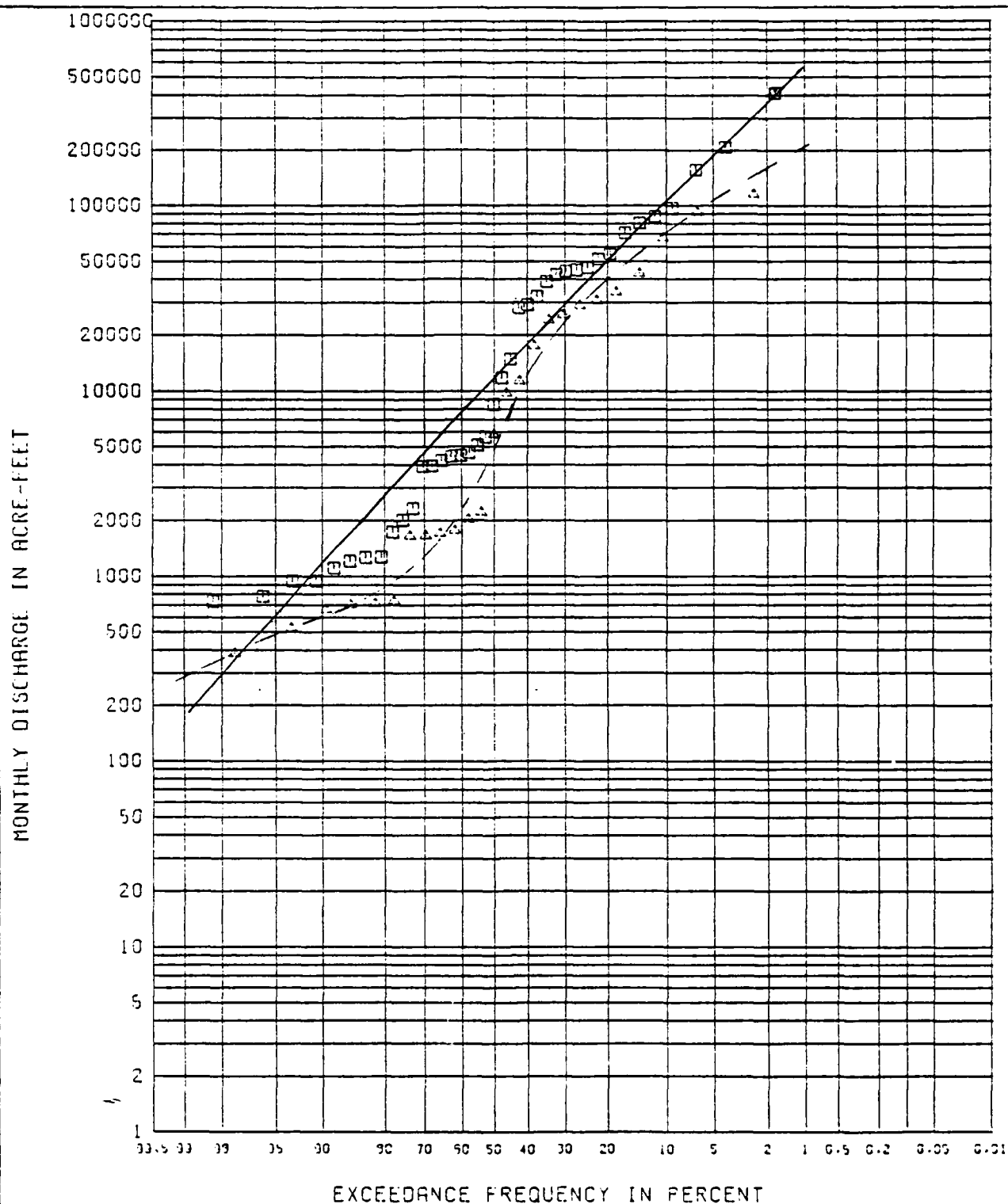
BELTON RESERVOIR

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

NOVEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE II



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1903-1945)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

BRAZOS RIVER BASIN, TEXAS

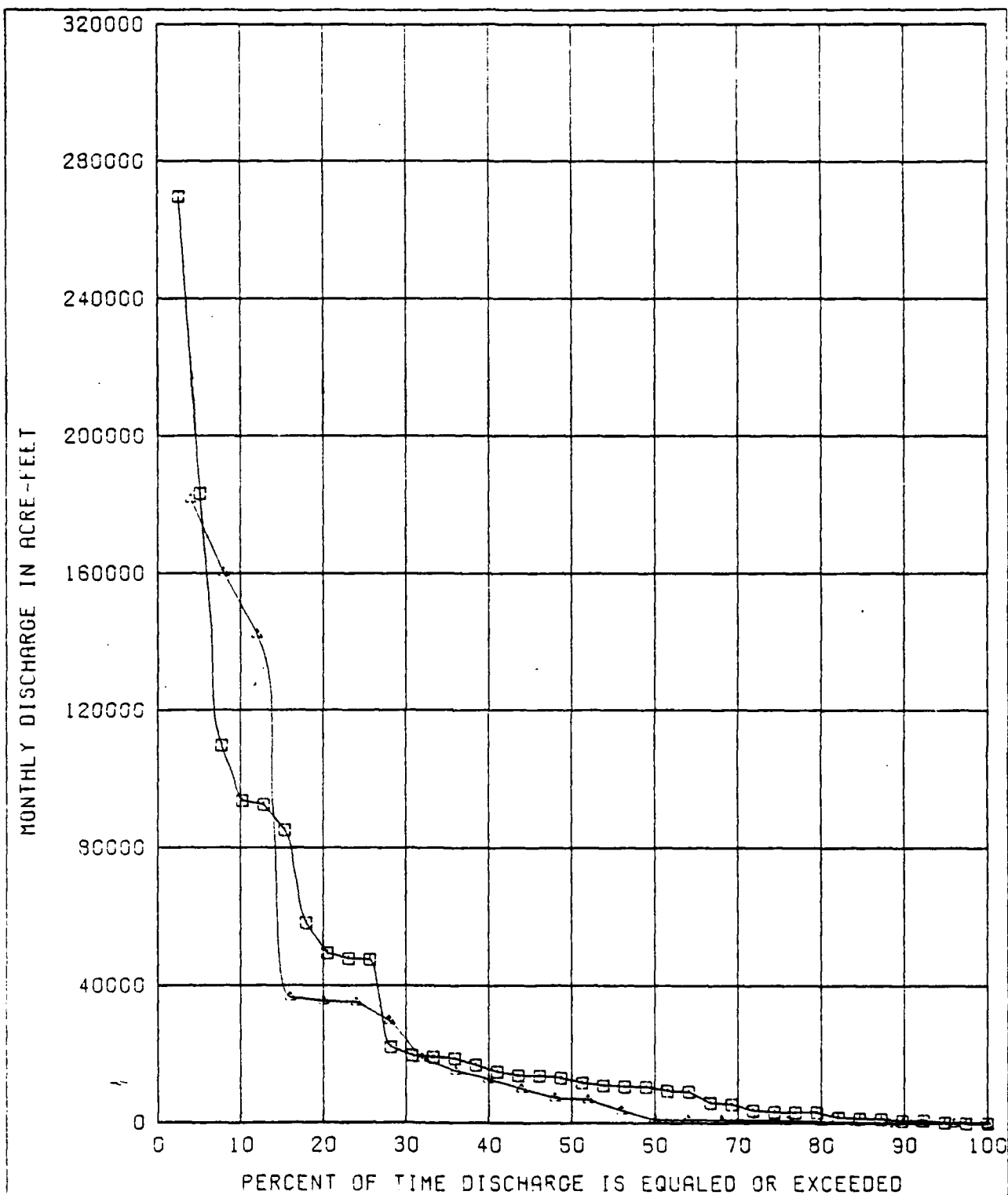
BELTON RESERVOIR

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

DECEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 12



LEGEND

□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1909-1949)

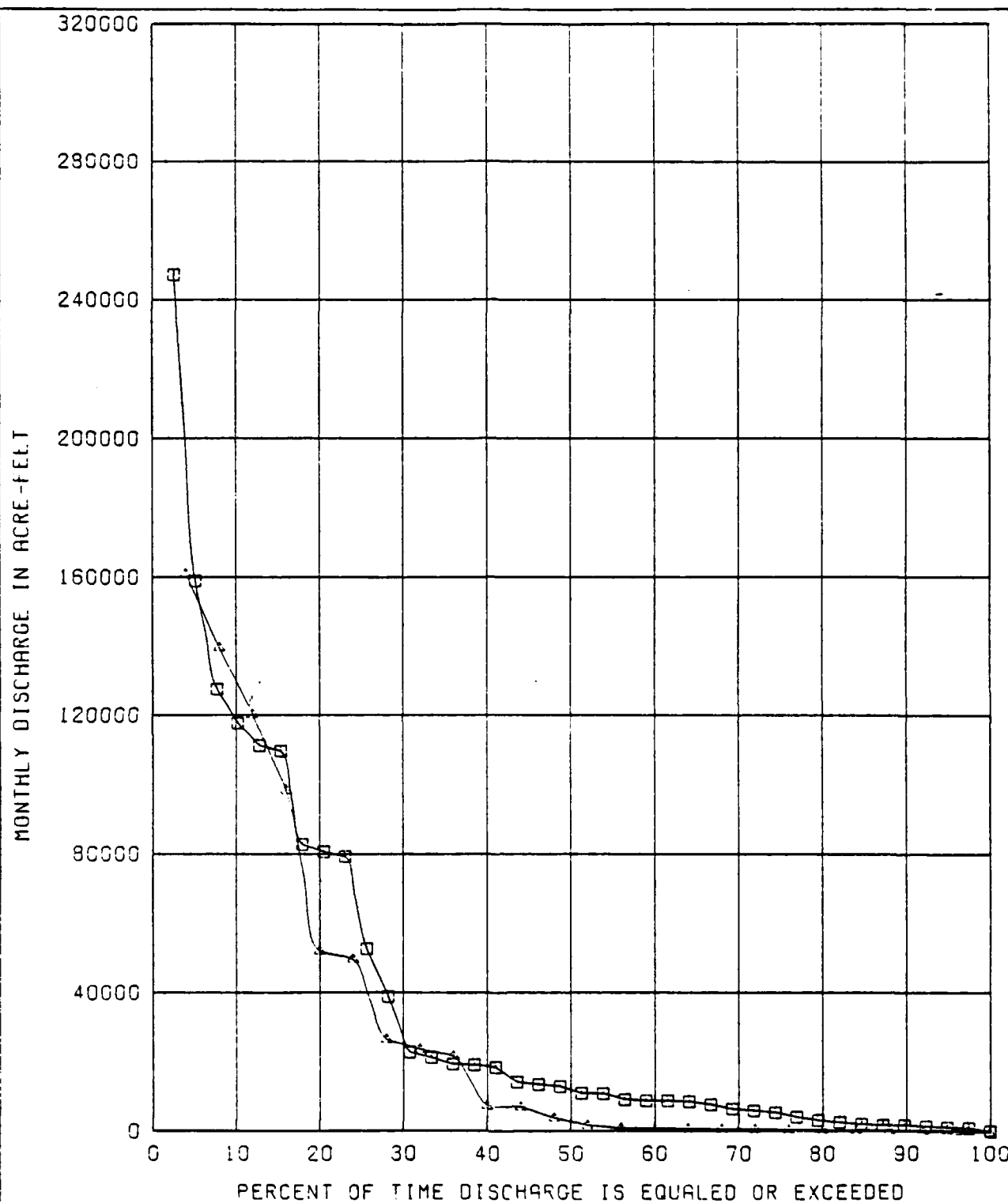
• — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

BRAZOS RIVER BASIN, TEXAS
BELTON RESERVOIR

FLOW DURATION CURVES AT DAM SITE
JANUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 13



LEGEND

□ PRE-IMPONDMENT CONDITIONS
(PERIOD OF RECORD 1909-1945)

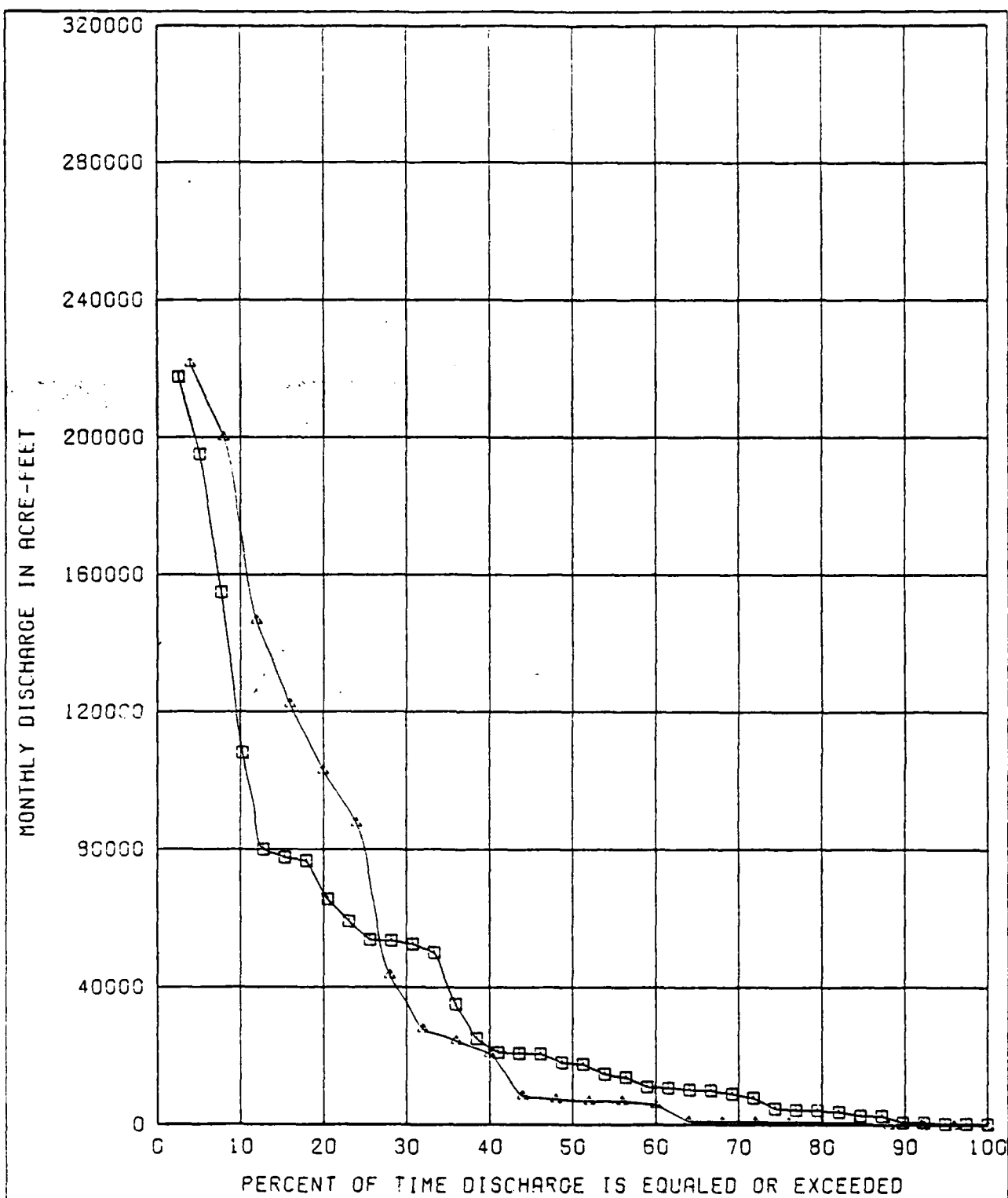
● POST-IMPONDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

BRAZOS RIVER BASIN, TEXAS
BELTON RESERVOIR

FLOW DURATION CURVES AT DAM SITE
FEBRUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 14



LEGEND

□ — □ PRE-IMPONDMENT CONDITIONS
(PERIOD OF RECORD 1909-1946)

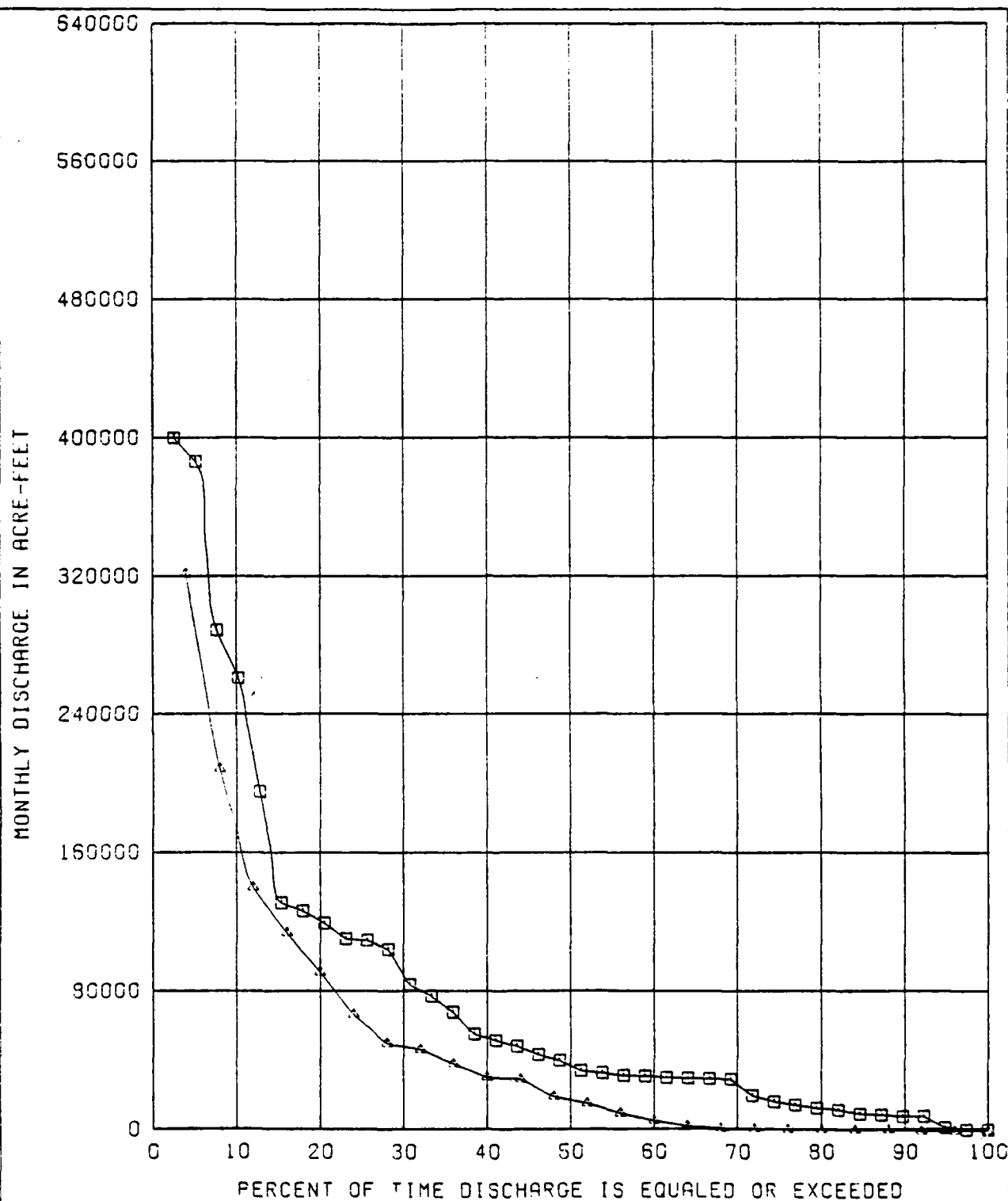
— — POST-IMPONDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

BRAZOS RIVER BASIN, TEXAS
BELTON RESERVOIR

FLOW DURATION CURVES AT DAM SITE
MARCH FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 15



LEGEND

□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1909-1945)

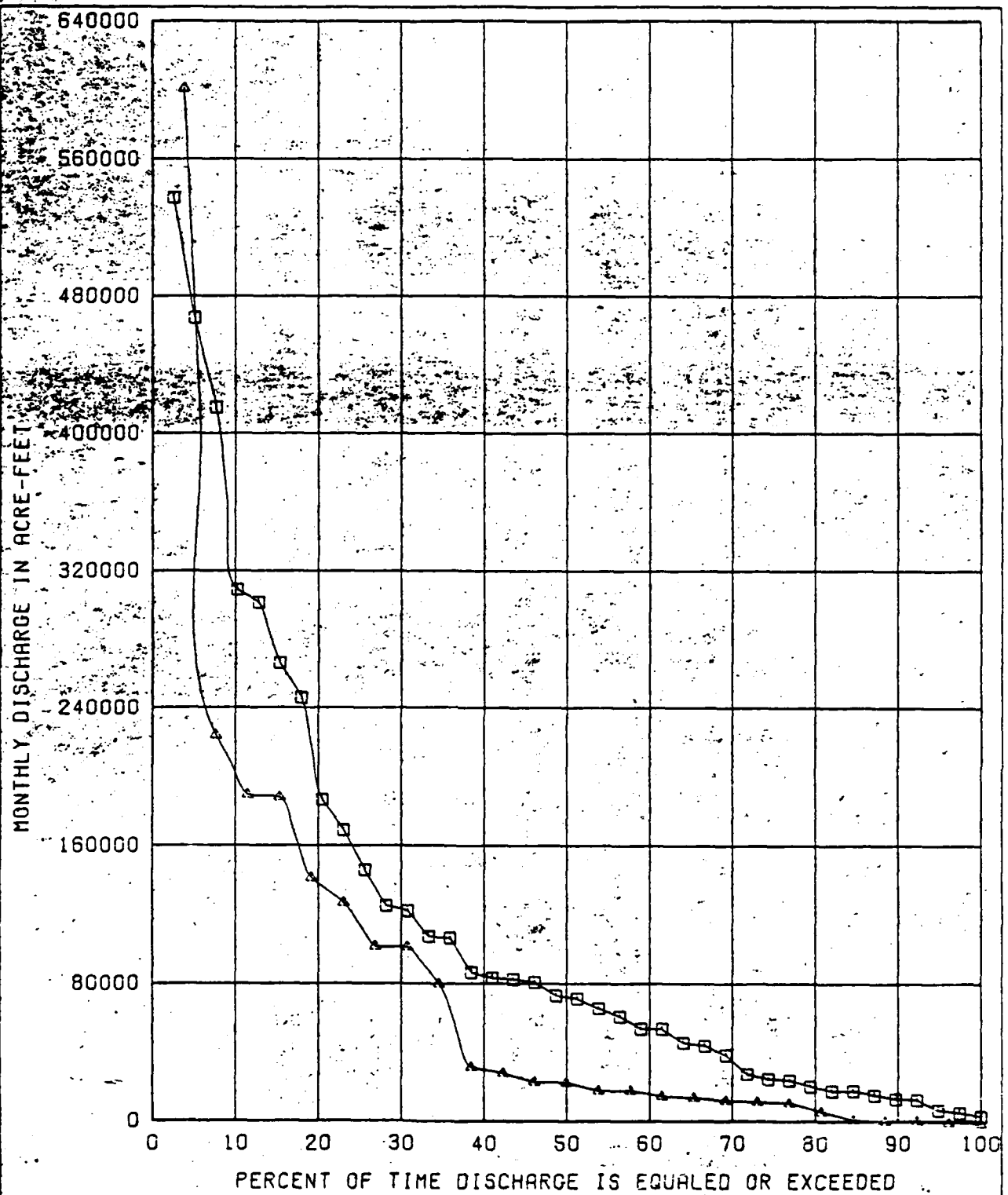
▲ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

BRAZOS RIVER BASIN, TEXAS
BELTON RESERVOIR

FLOW DURATION CURVES AT DAM SITE
APRIL FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 16



LEGEND

□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1909-1949)

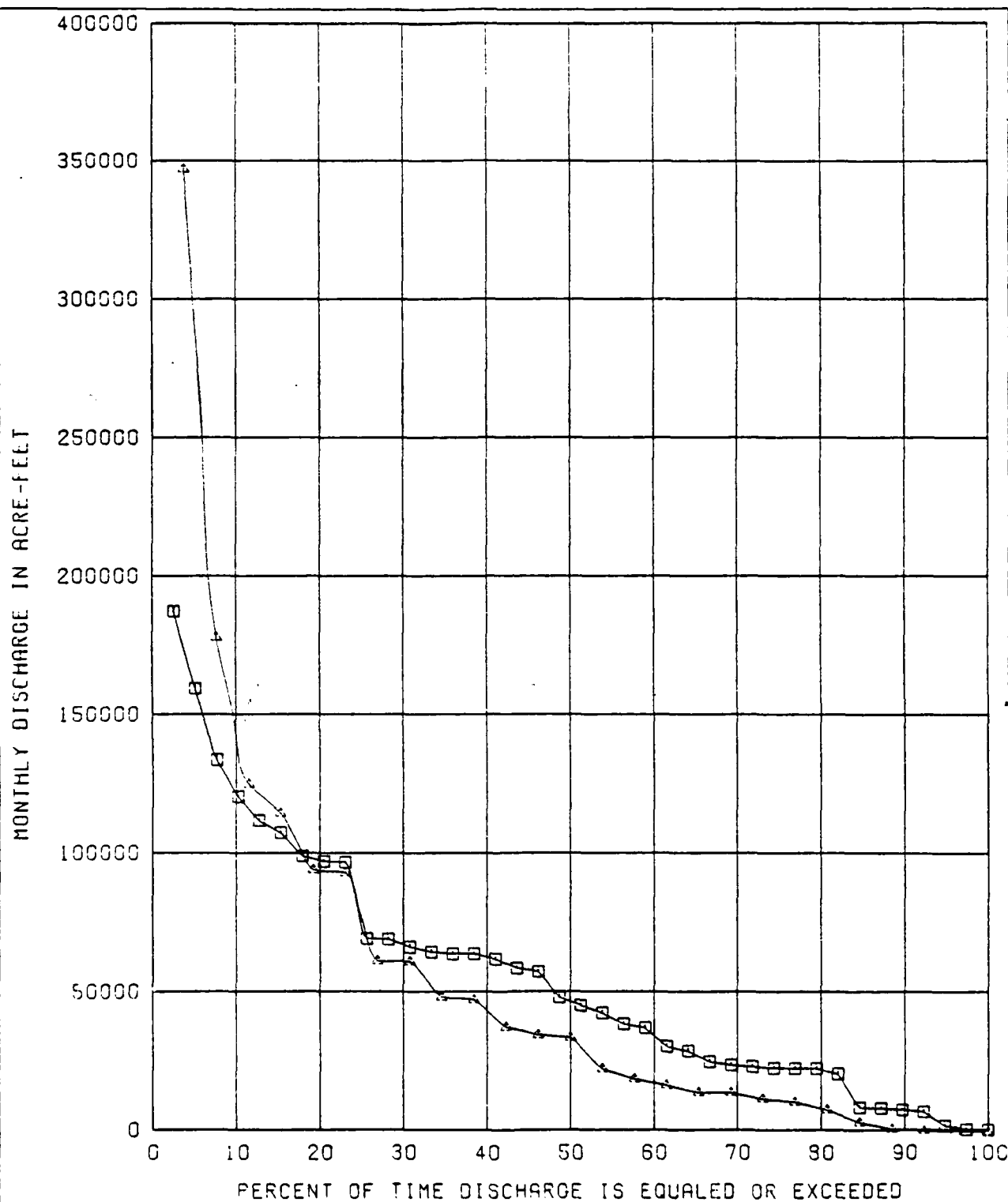
▲ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

BRAZOS RIVER BASIN, TEXAS

BELTON RESERVOIR

FLOW DURATION CURVES AT DAM SITE
MAY FLOWSU.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 17



LEGEND

□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1909-1948)

△ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

BRAZOS RIVER BASIN, TEXAS

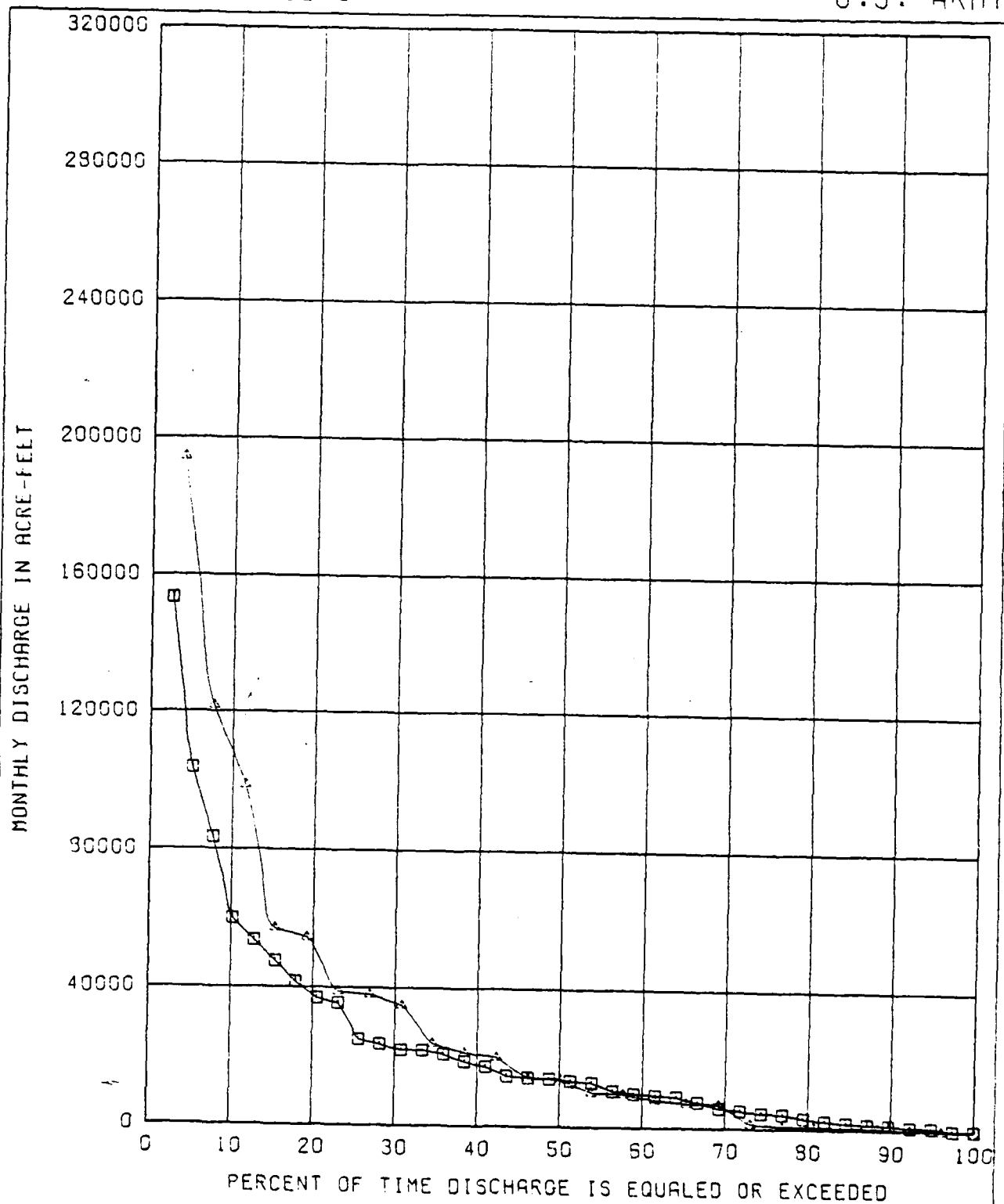
BELTON RESERVOIR

FLOW DURATION CURVES AT DAM SITE

JUNE FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 18



LEGEND

□ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1903-1949)

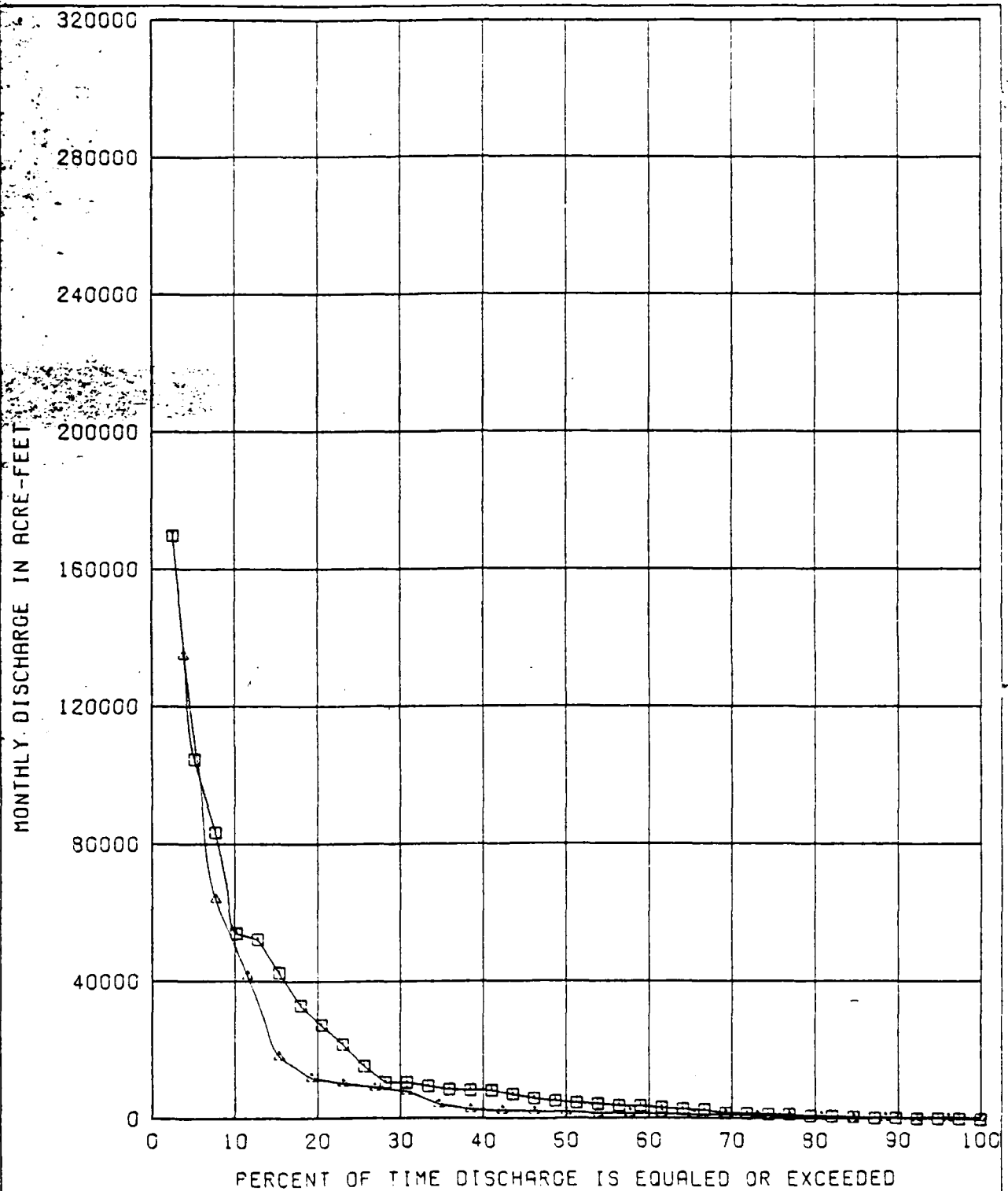
△ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

BRAZOS RIVER BASIN, TEXAS
BELTON RESERVOIR

FLOW DURATION CURVES AT DAM SITE
JULY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 19



LEGEND

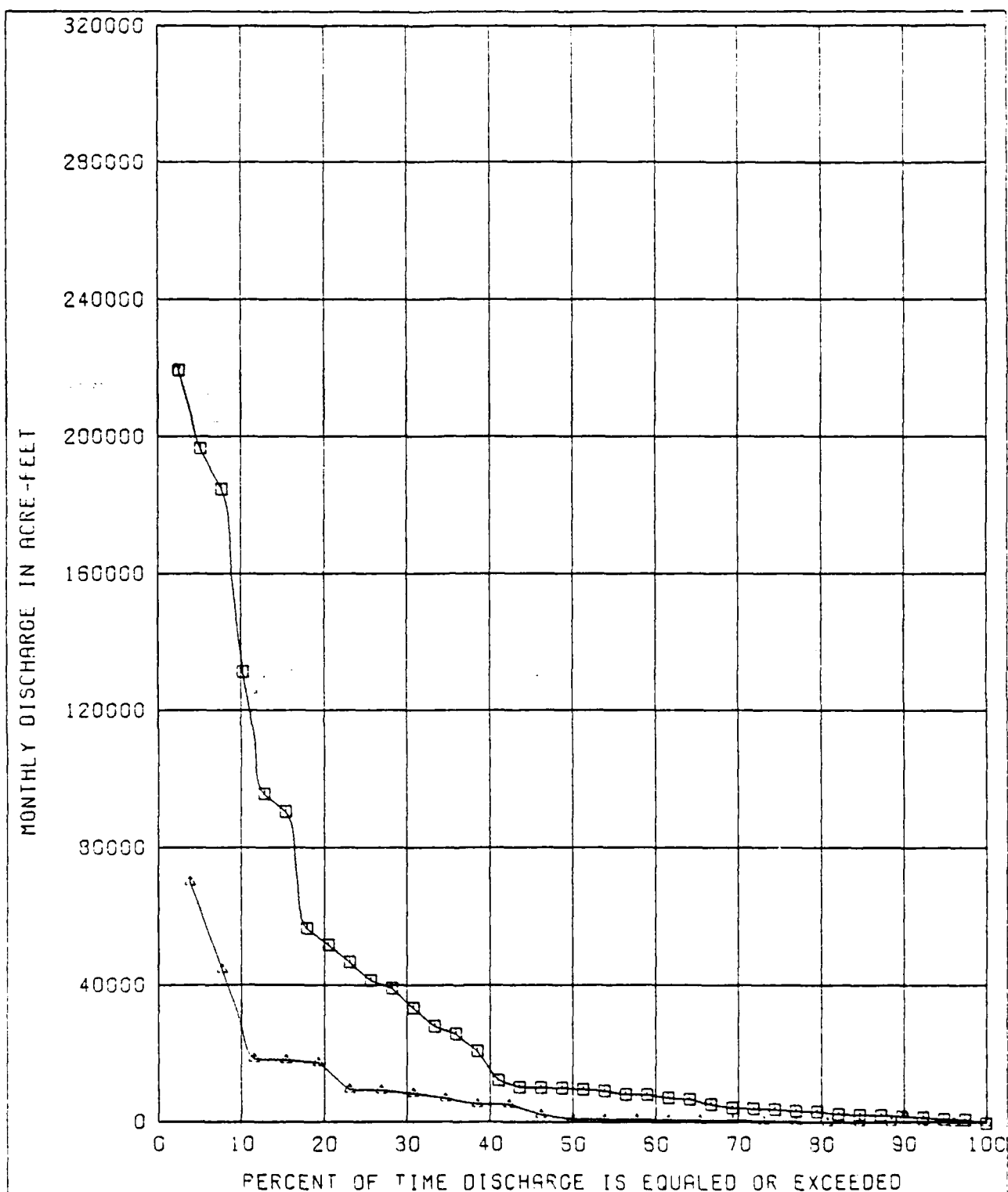
- — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1909-1949)
- ▲ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1950-1979)

BRAZOS RIVER BASIN, TEXAS
BELTON RESERVOIR

FLOW DURATION CURVES AT DAM SITE
AUGUST FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 20



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1909-1949)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

BRAZOS RIVER BASIN, TEXAS

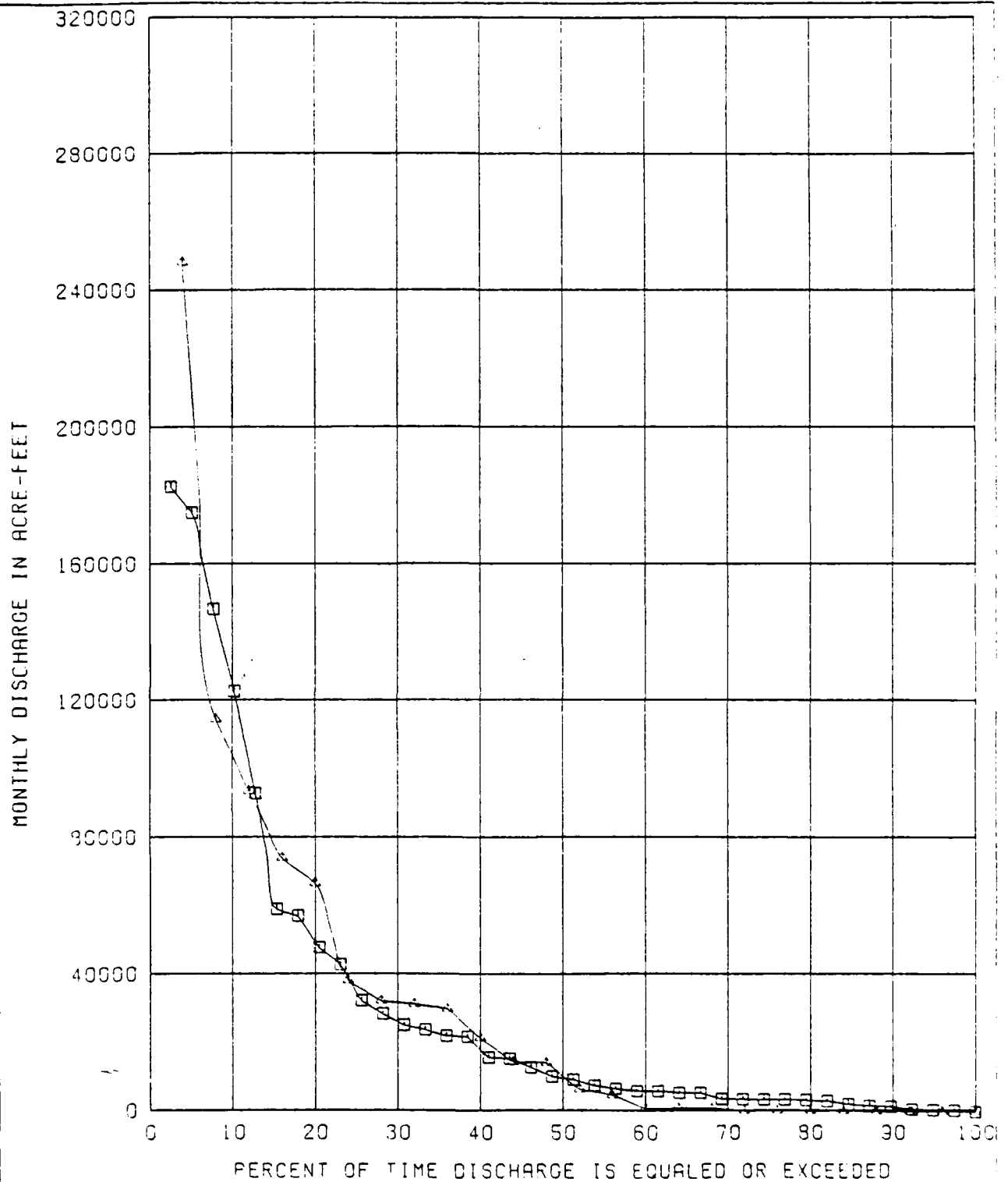
BELTON RESERVOIR

FLOW DURATION CURVES AT DAM SITE

SEPTEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 21



LEGEND

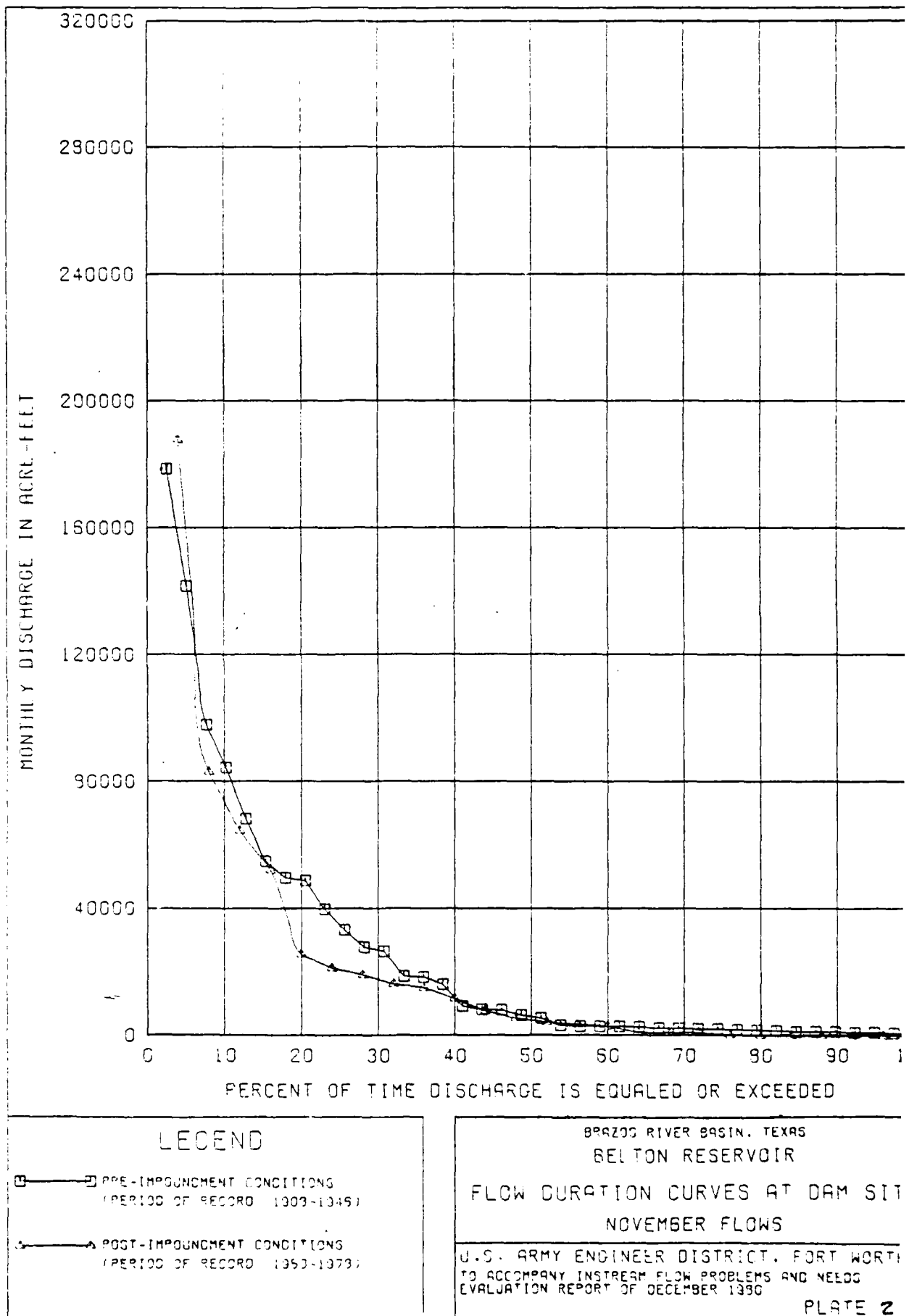
- PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1903-1949)
- △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1950-1979)

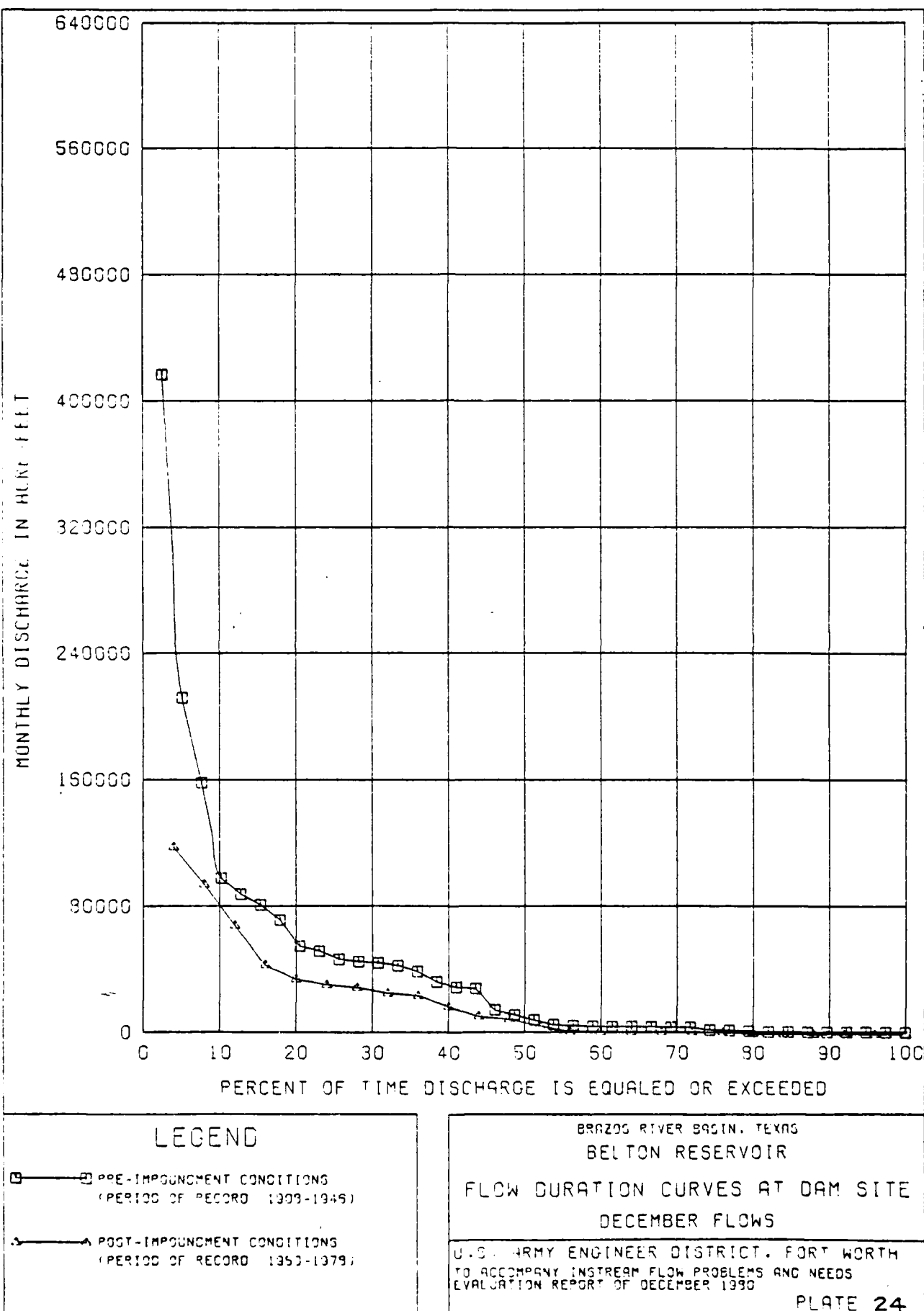
BRAZOS RIVER BASIN, TEXAS
BELTON RESERVOIR

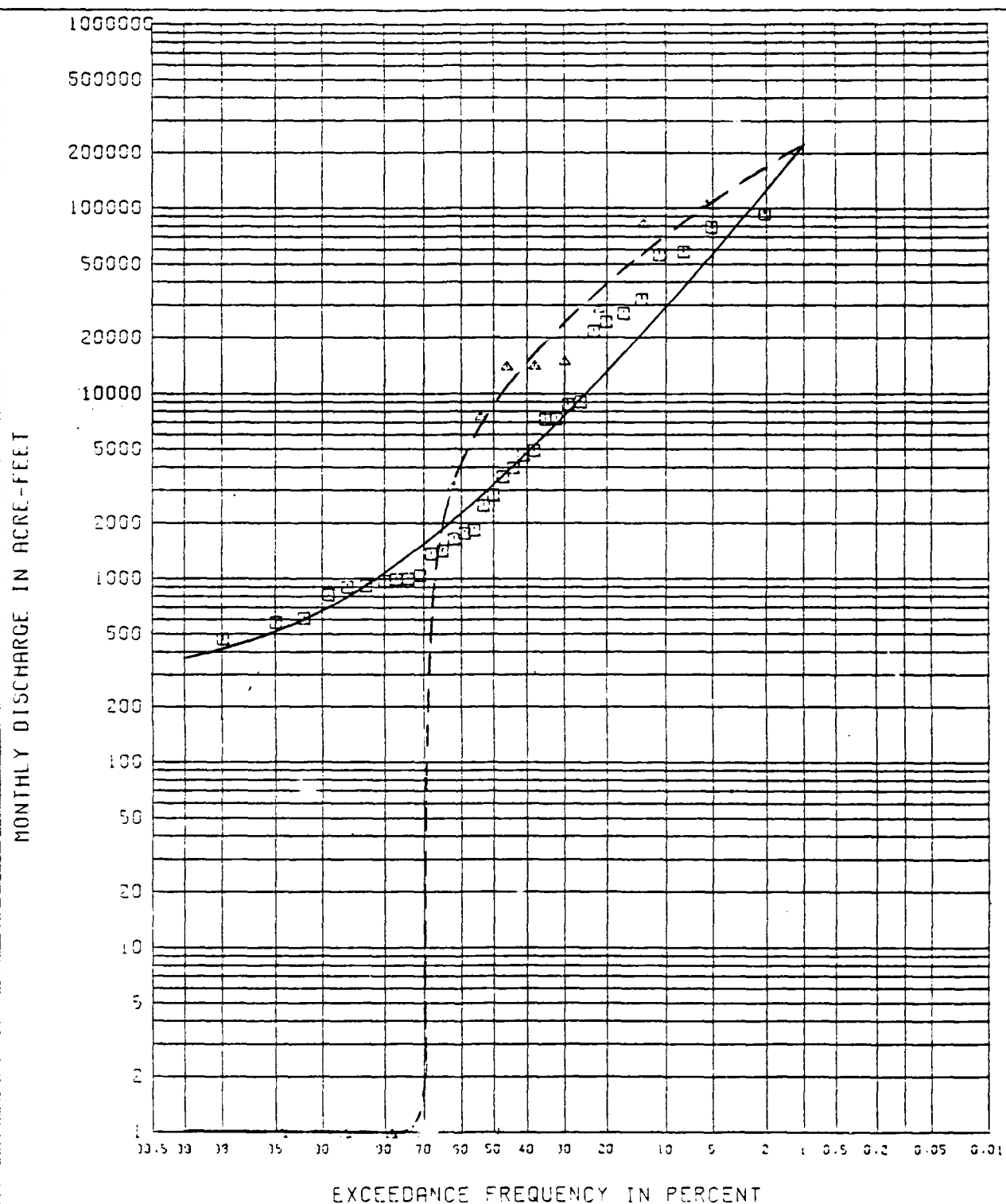
FLOW DURATION CURVES AT DAM SITE
OCTOBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 22







LEGEND

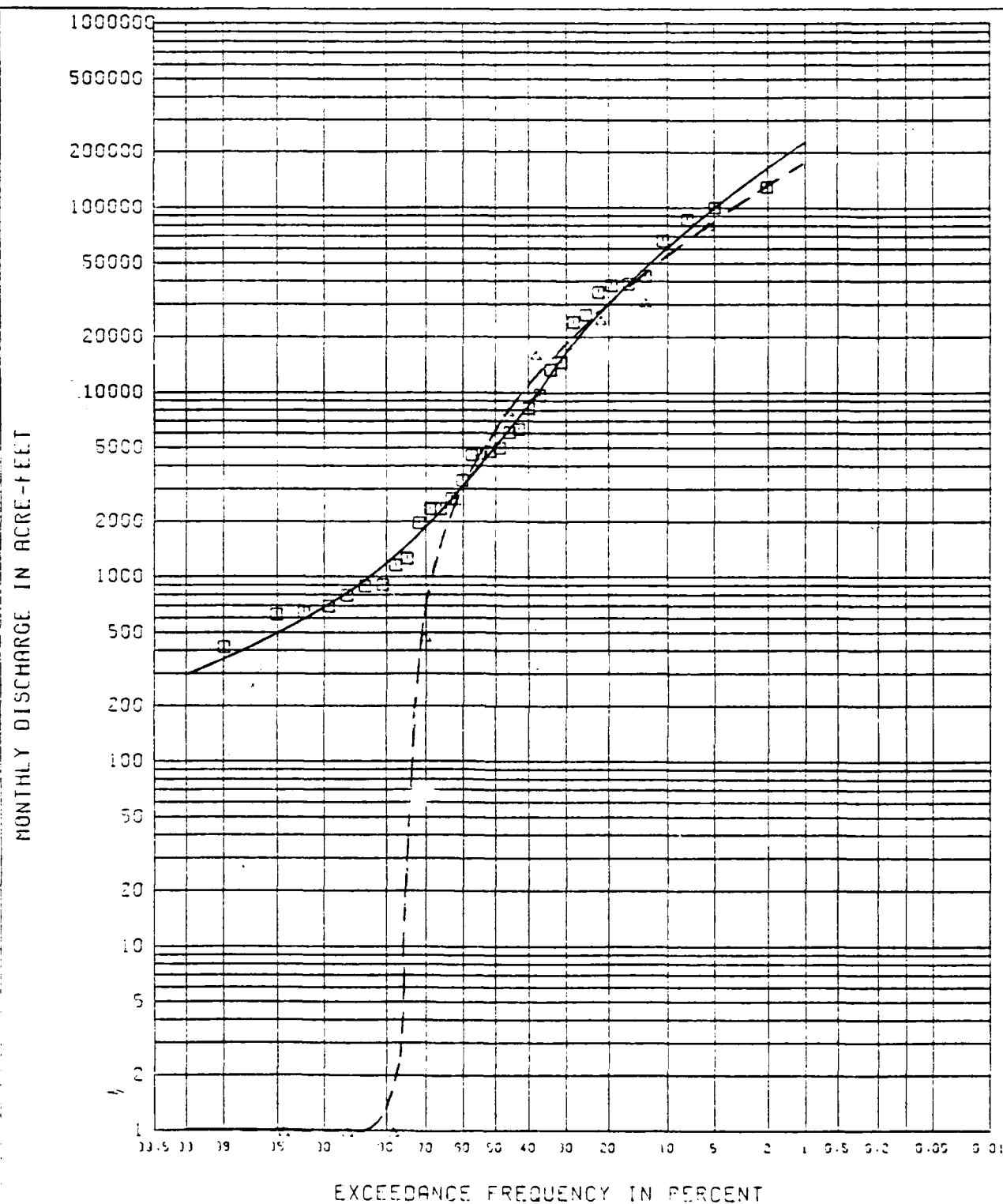
□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1957)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1967-1979)

BRAZOS RIVER BASIN, TEXAS
STILLHOUSE HOLLOW LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
JANUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE I



LEGEND

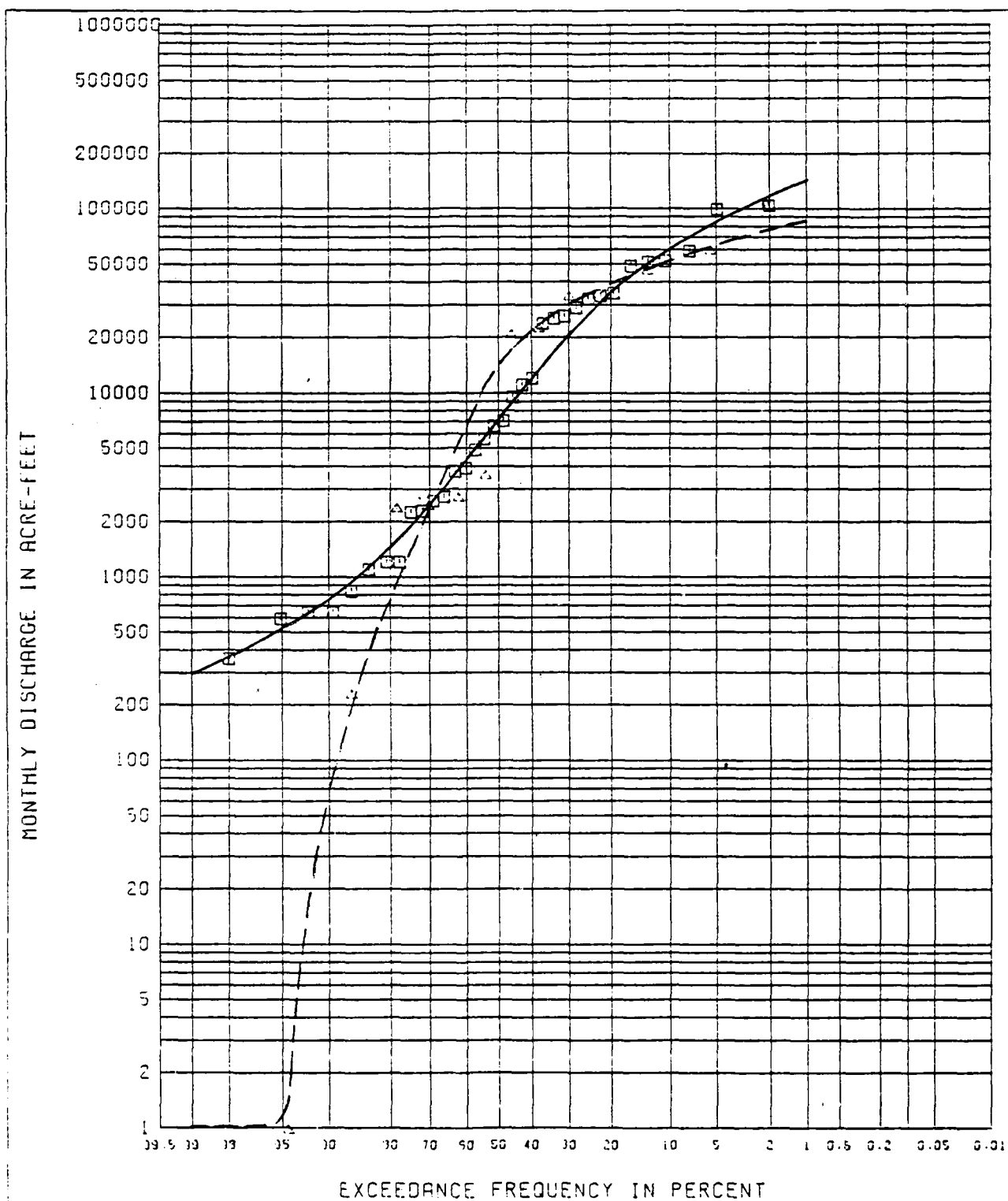
—■— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1957)

-▲- POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1957-1973)

BRAZOS RIVER BASIN, TEXAS
STILLHOUSE HOLLOW LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
FEBRUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 2



LEGEND

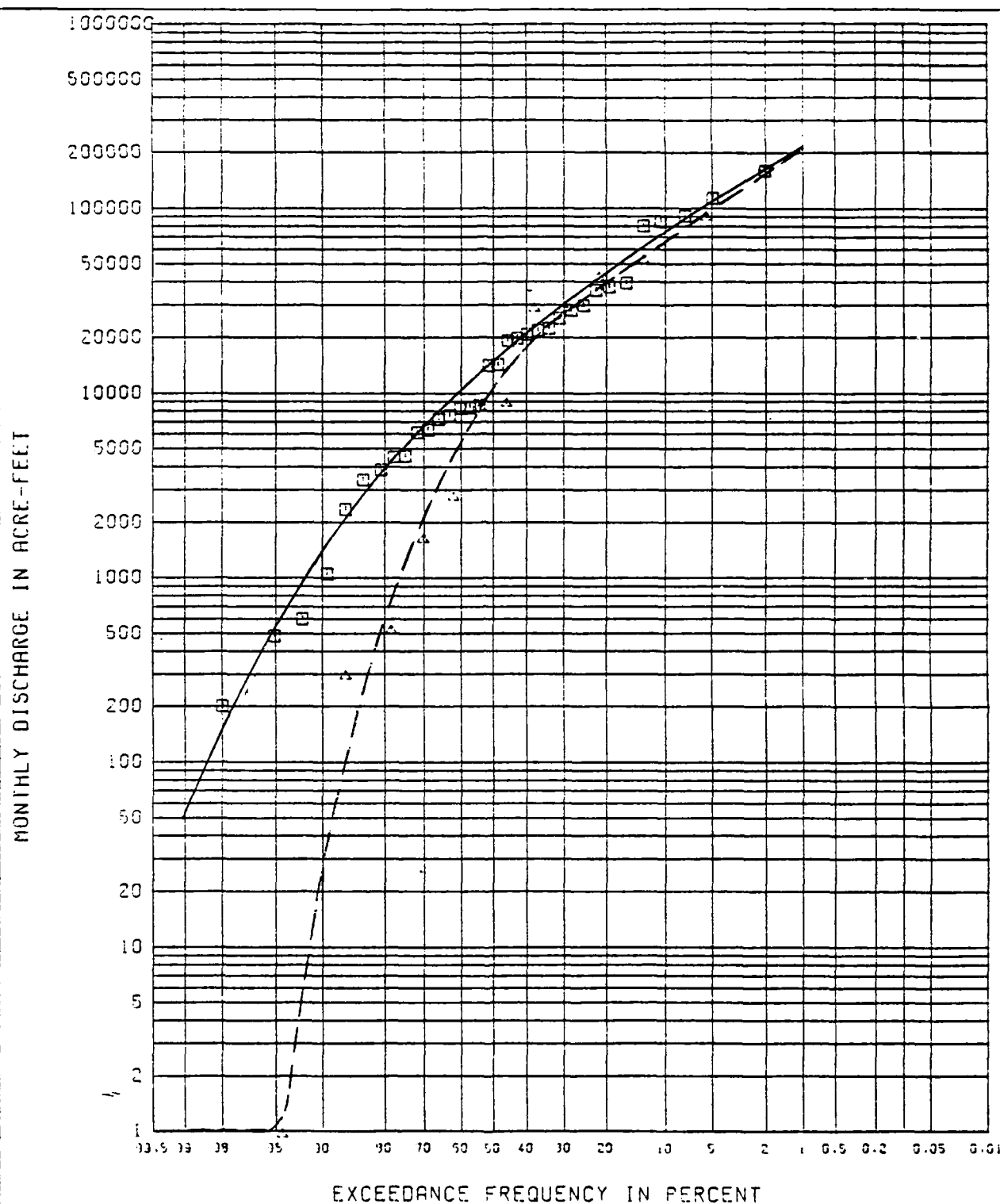
□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1957)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1957-1979)

BRAZOS RIVER BASIN, TEXAS
STILLHOUSE HOLLOW LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
MARCH FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 3



LEGEND

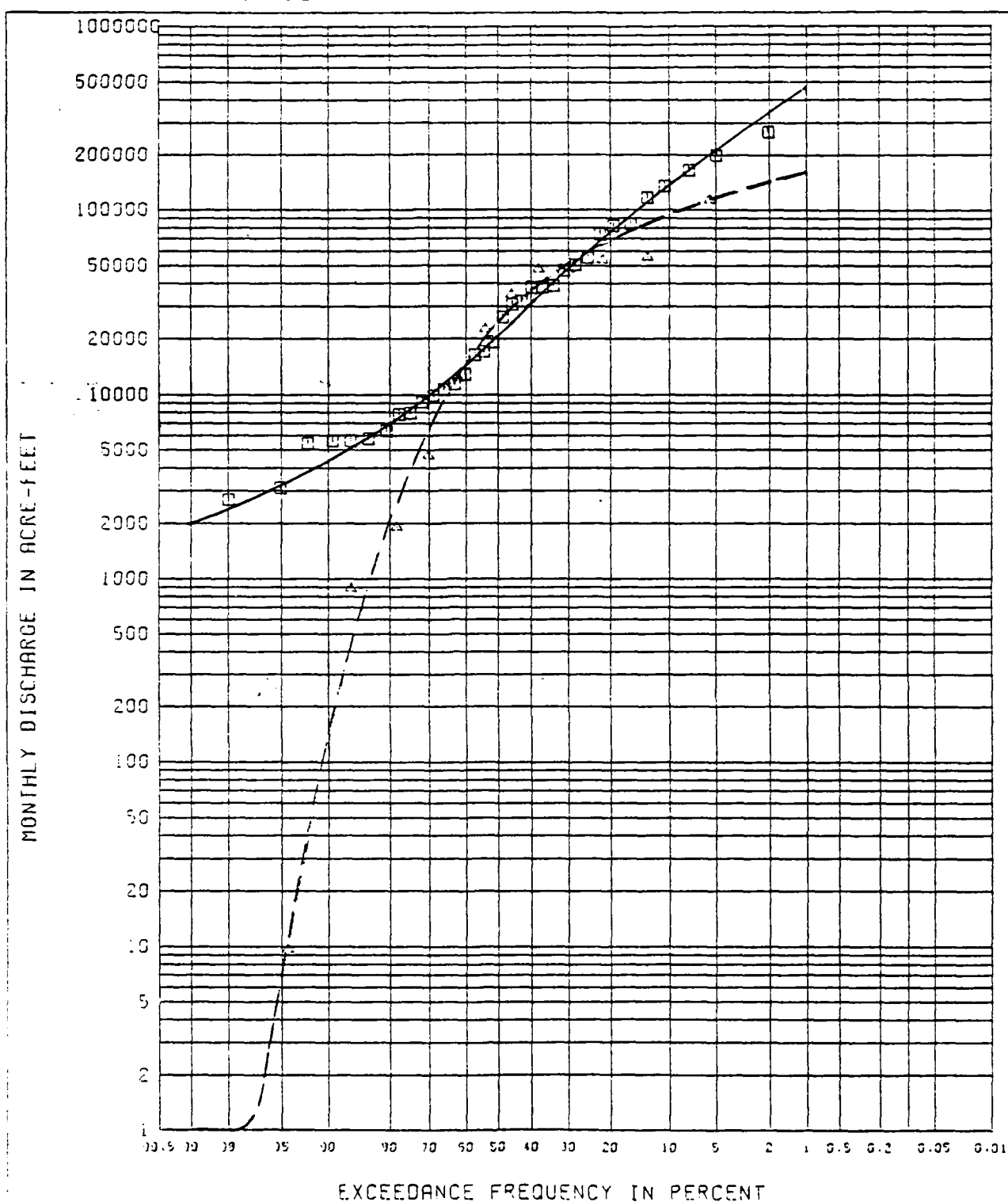
□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1957)

△ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1957-1979)

BRAZOS RIVER BASIN, TEXAS
STILLHOUSE HOLLOW LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
APRIL FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 4



LEGEND

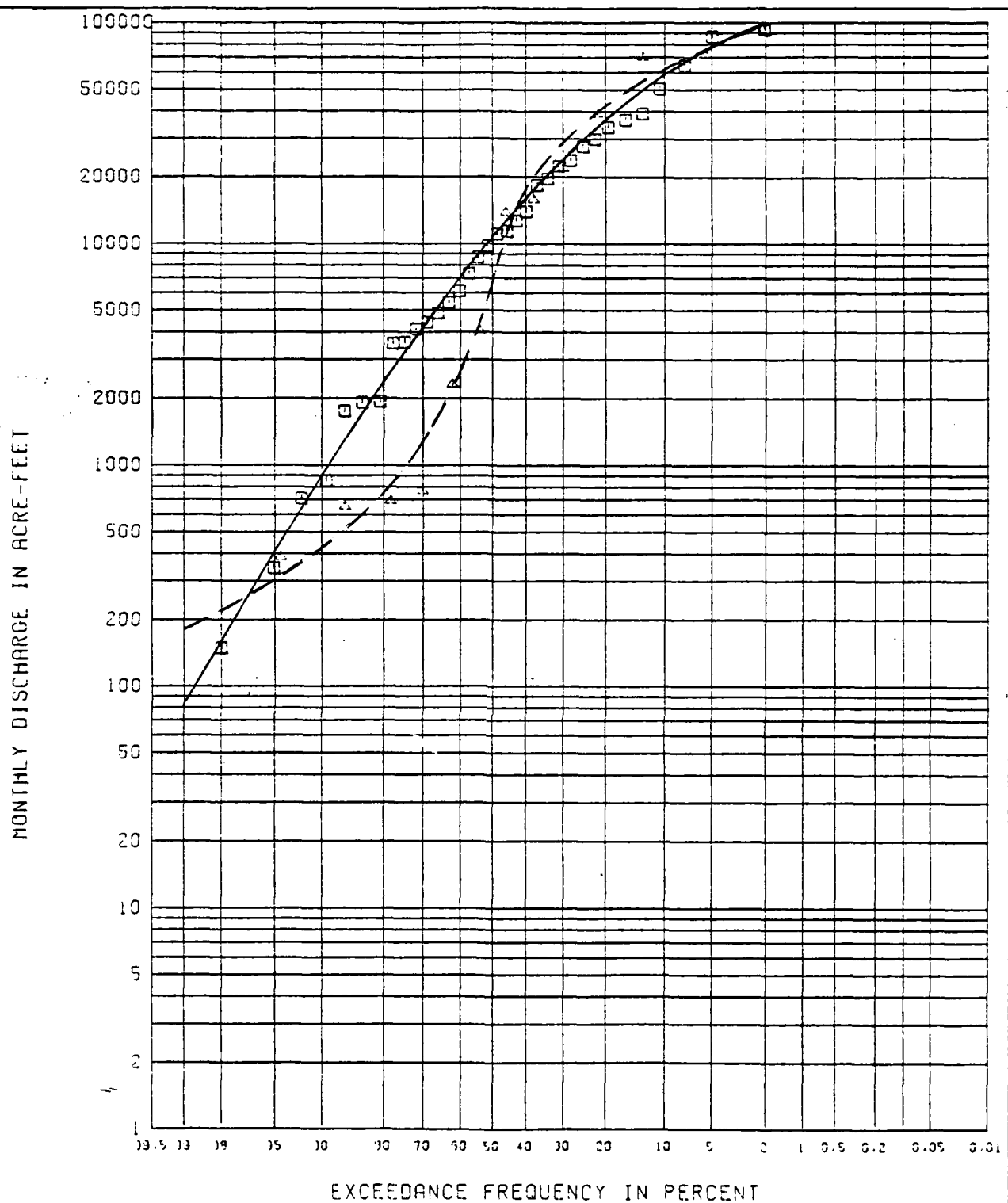
□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1957)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1957-1979)

BRAZOS RIVER BASIN, TEXAS
STILLHOUSE HOLLOW LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
MAY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 5



LEGEND

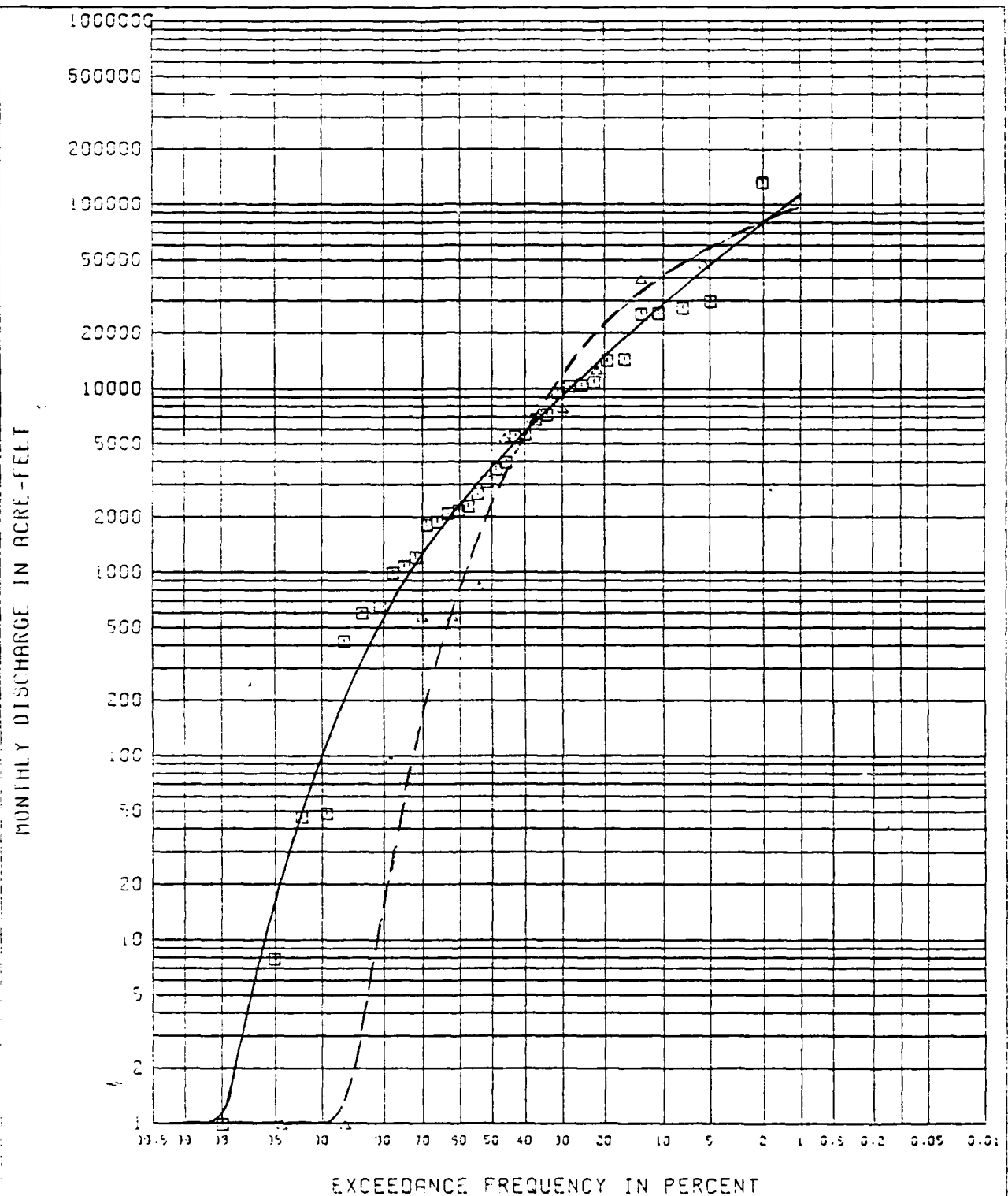
□ — □ PRE-IMPONDMENT CONDITIONS
(PERIOD OF RECORD 1924-1957)

△ — △ POST-IMPONDMENT CONDITIONS
(PERIOD OF RECORD 1957-1979)

BRAZOS RIVER BASIN, TEXAS
STILLHOUSE HOLLOW LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
JUNE FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 6



LEGEND

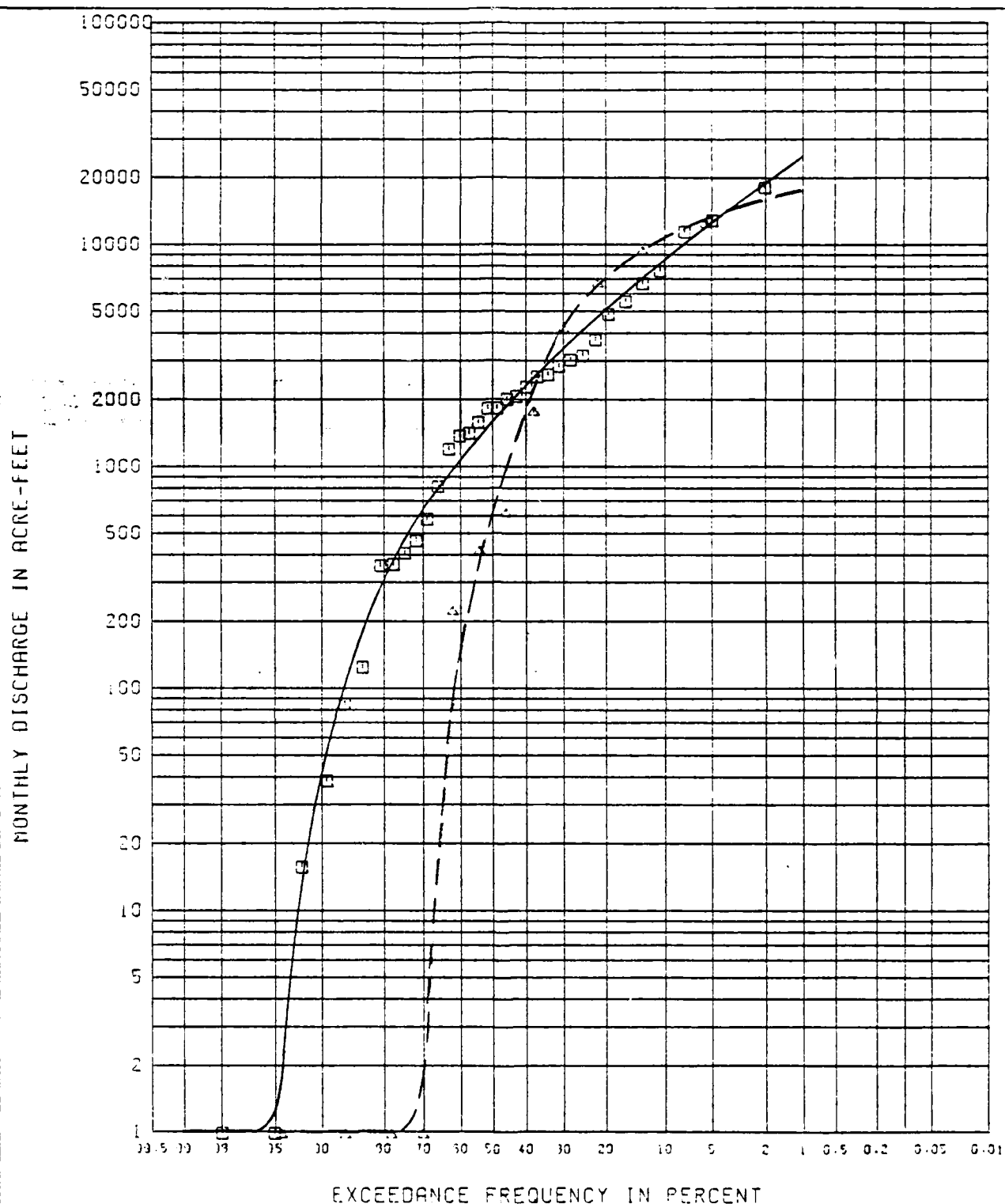
□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1957)

△ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1967-1979)

BRAZOS RIVER BASIN, TEXAS
STILLHOUSE HOLLOW LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
JULY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 7

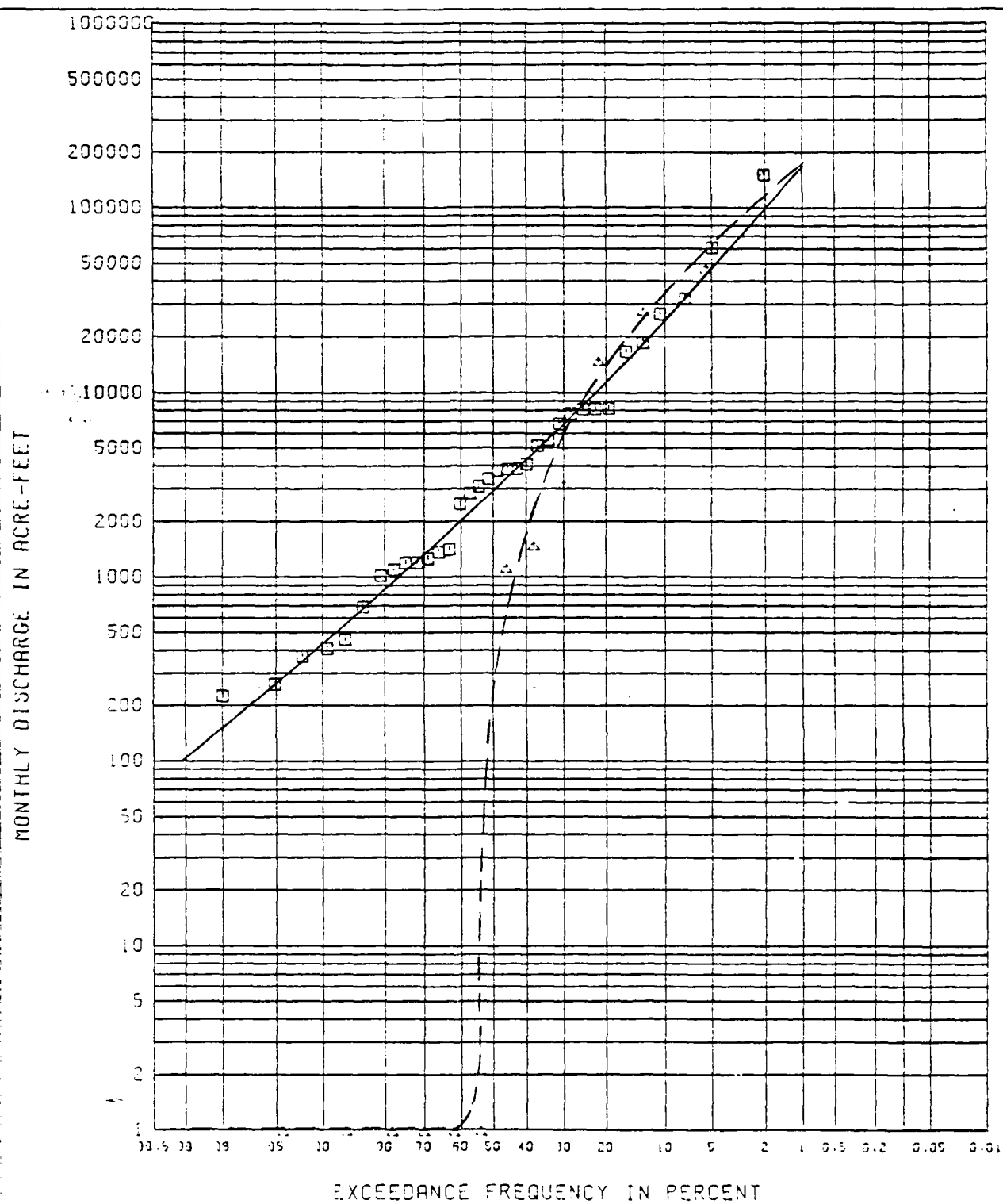


LEGEND

- — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1957)
- △ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1967-1973)

BRAZOS RIVER BASIN, TEXAS
STILLHOUSE HOLLOW LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
AUGUST FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990



LEGEND

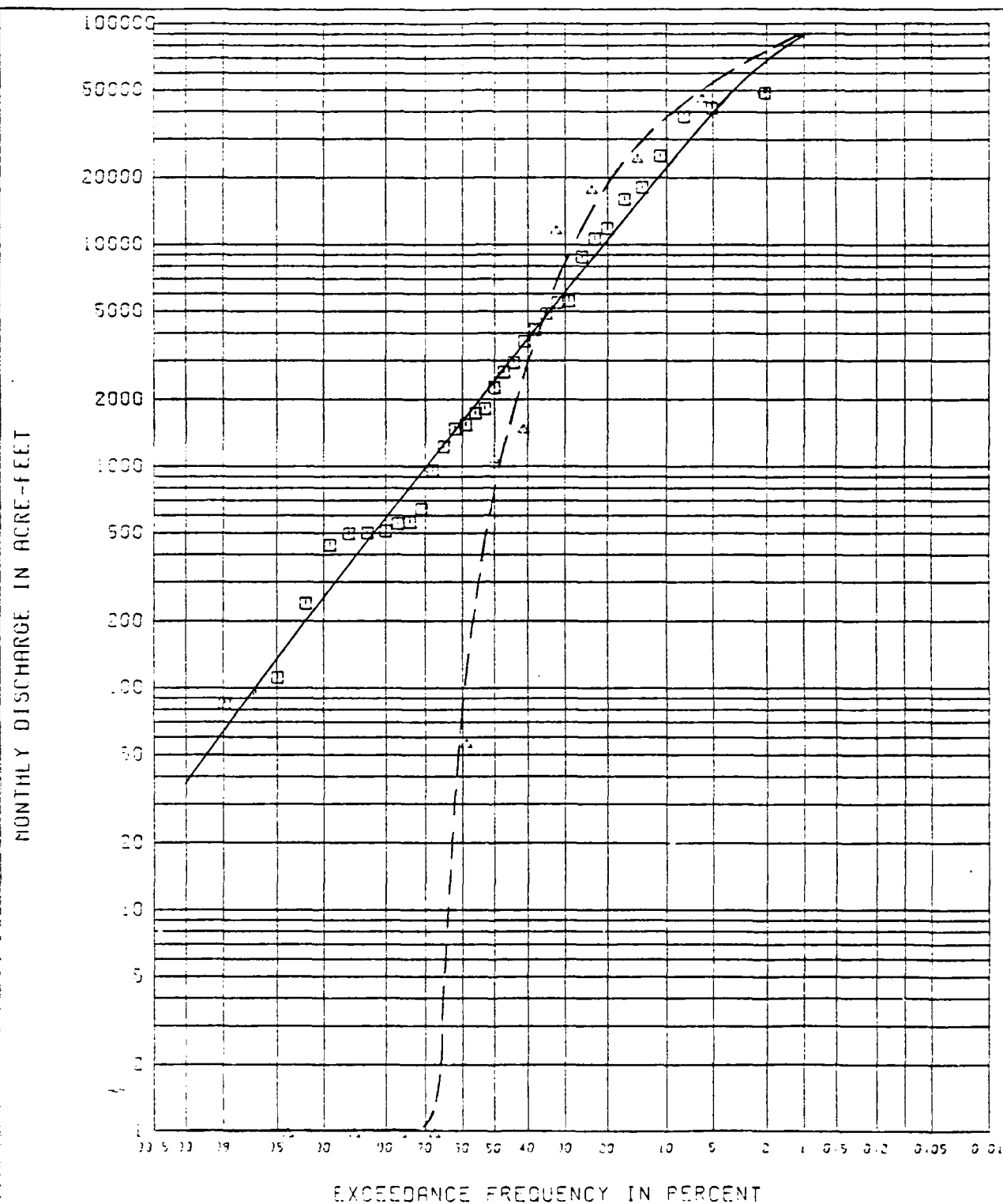
□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1957)

△ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1957-1973)

BRAZOS RIVER BASIN, TEXAS
STILLHOUSE HOLLOW LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
SEPTEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 9



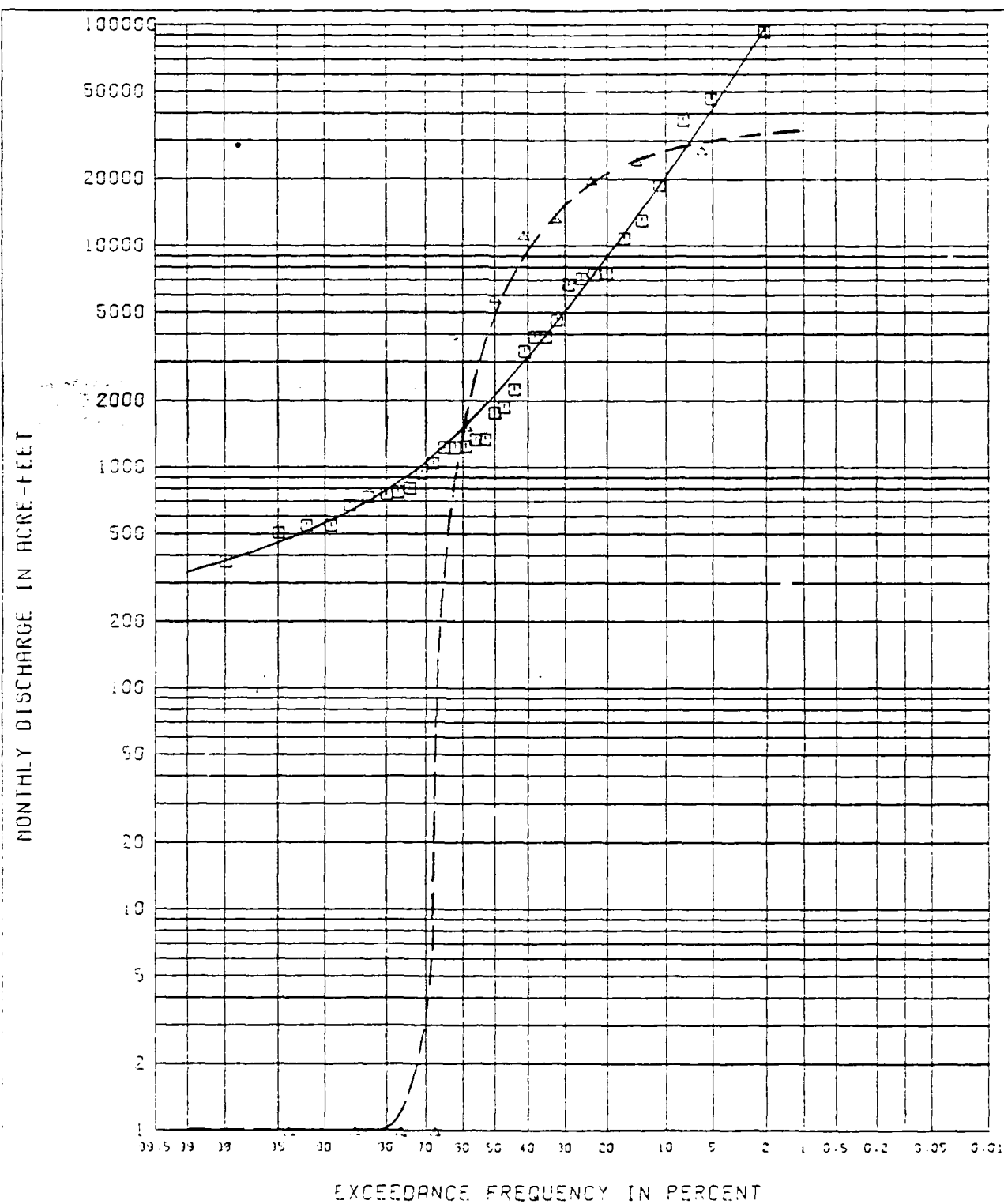
LEGEND

- — □ PRE-IMPOUNDMENT CONDITIONS
 (PERIOD OF RECORD 1924-1957)
- △ — △ POST-IMPOUNDMENT CONDITIONS
 (PERIOD OF RECORD 1957-1979)

BRAZOS RIVER BASIN, TEXAS
 STILLHOUSE HOLLOW LAKE
 DISCHARGE-FREQUENCY RELATIONS
 AT DAM SITE
 OCTOBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
 TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
 EVALUATION REPORT OF DECEMBER 1990

PLATE 10



LEGEND

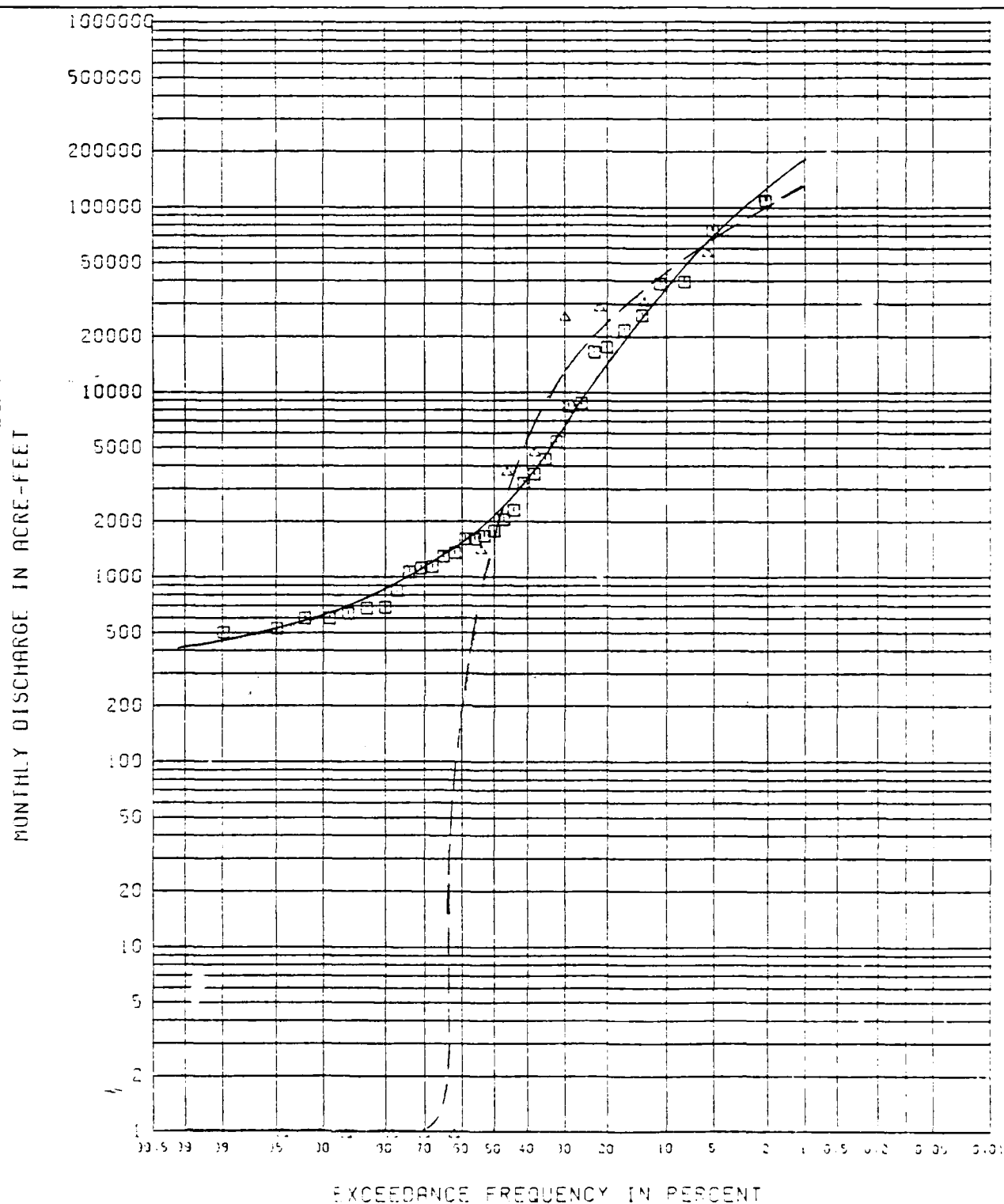
□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1957)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1957-1979)

BRAZOS RIVER BASIN, TEXAS
STILLHOUSE HOLLOW LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
NOVEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE II



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1957)

— — — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1957-1973)

BRAZOS RIVER BASIN, TEXAS
STILLHOUSE HOLLOW LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
DECEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 12

AD-A156 497 RESERVOIR CONTROL CENTER: ACTIVITIES AND ACCOMPLISHMENTS OF THE SOUTHWEST. (U) CORPS OF ENGINEERS DALLAS TX SOUTHWESTERN DIV JAN 81

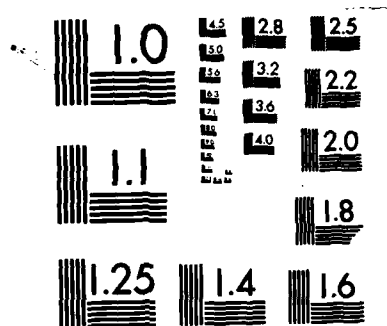
RESERVOIR CONTROL CENTER: ACTIVITIES AND
ACCOMPLISHMENTS OF THE SOUTHWEST. (U) CORPS OF
ENGINEERS DALLAS TX SOUTHWESTERN DIV JAN 81

67

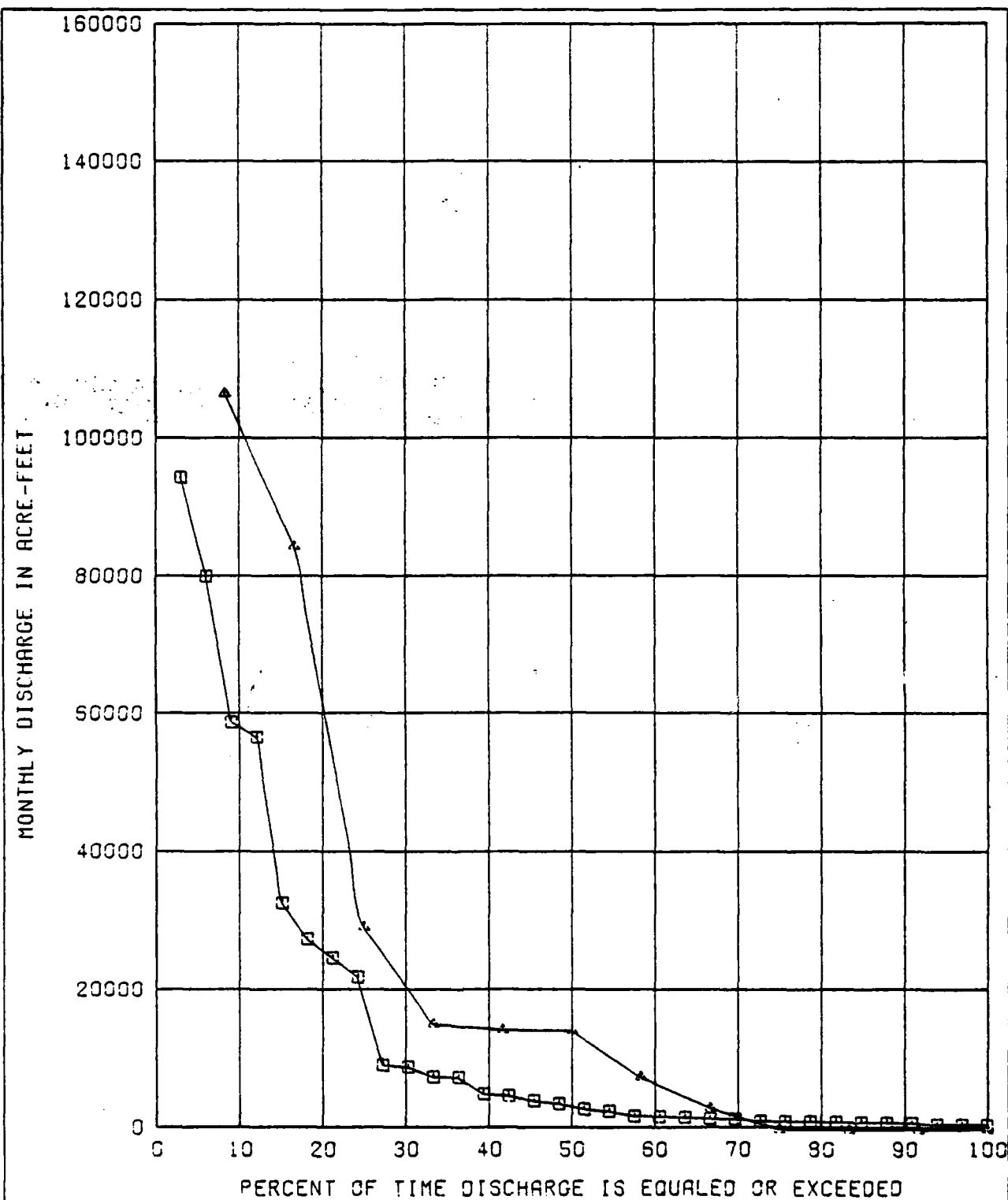
UNCLASSIFIED F/G 13/2

F/G 13/2

NL



MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A



LEGEND

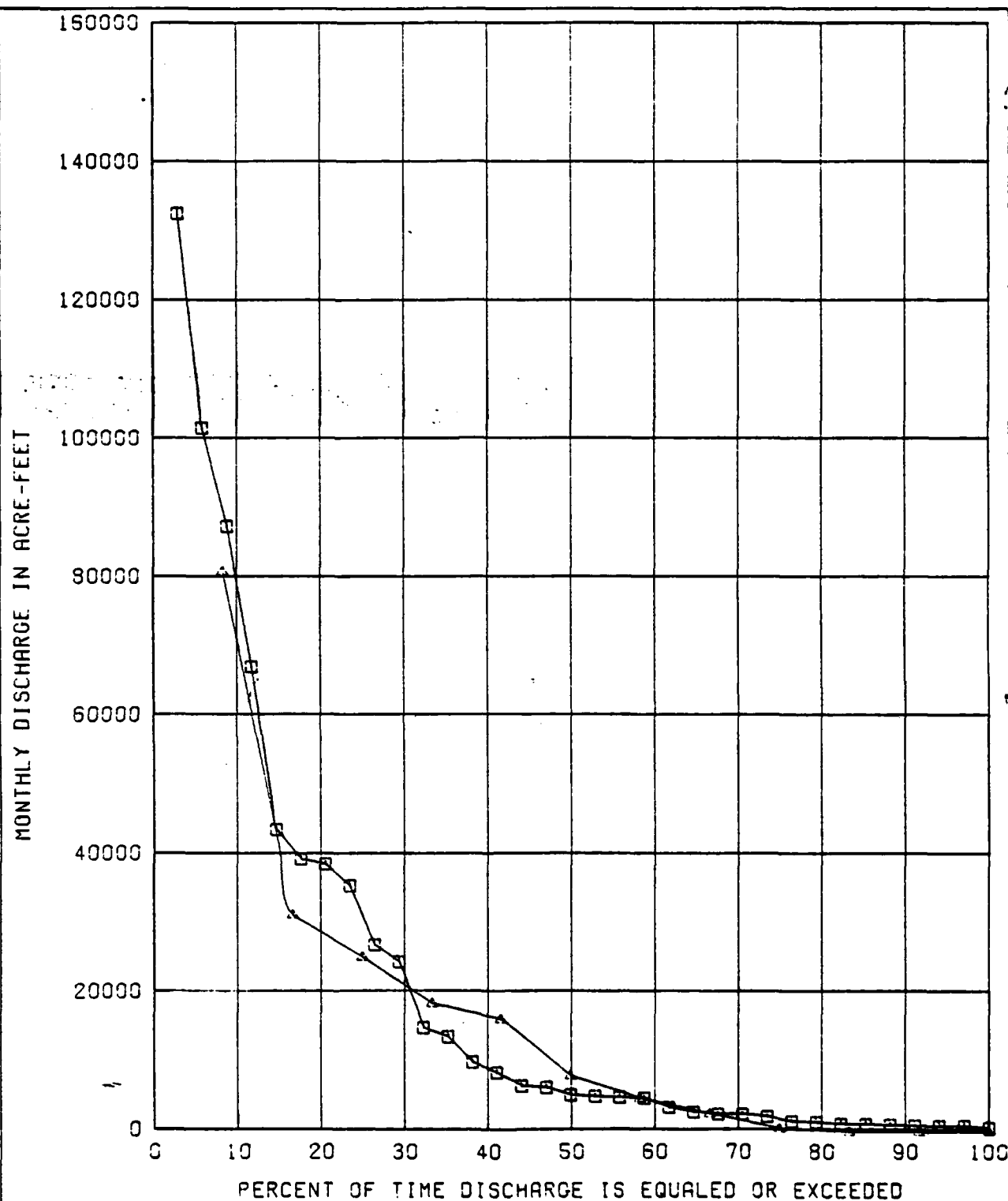
□ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1957)

▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1957-1979)

BRAZOS RIVER BASIN, TEXAS
STILLHOUSE HOLLOW LAKE
FLOW DURATION CURVES AT DAM SITE
JANUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1960

PLATE 13



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1957)

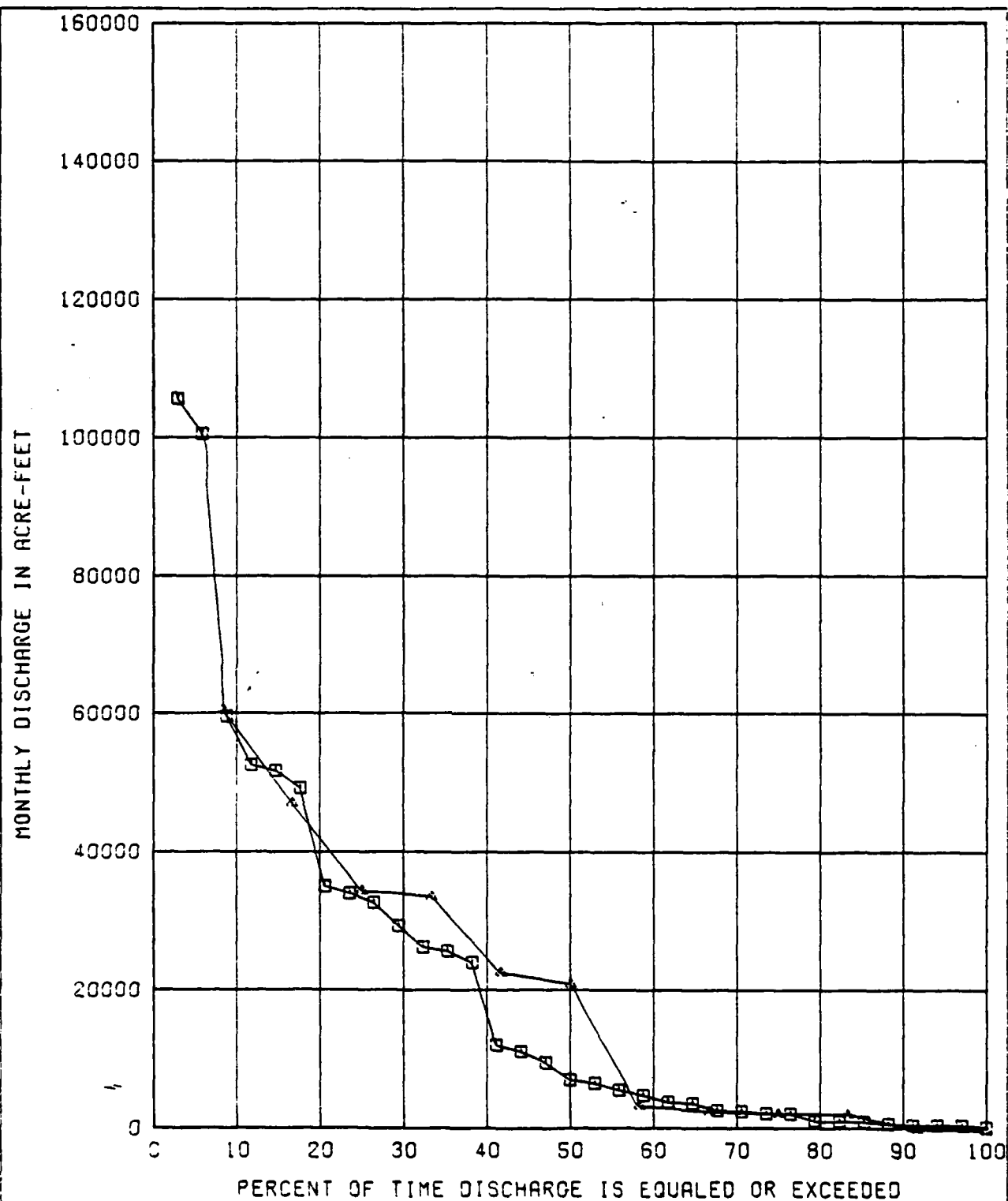
▲ — ▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1967-1973)

BRAZOS RIVER BASIN, TEXAS
STILLHOUSE HOLLOW LAKE

FLOW DURATION CURVES AT DAM SITE
FEBRUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 14



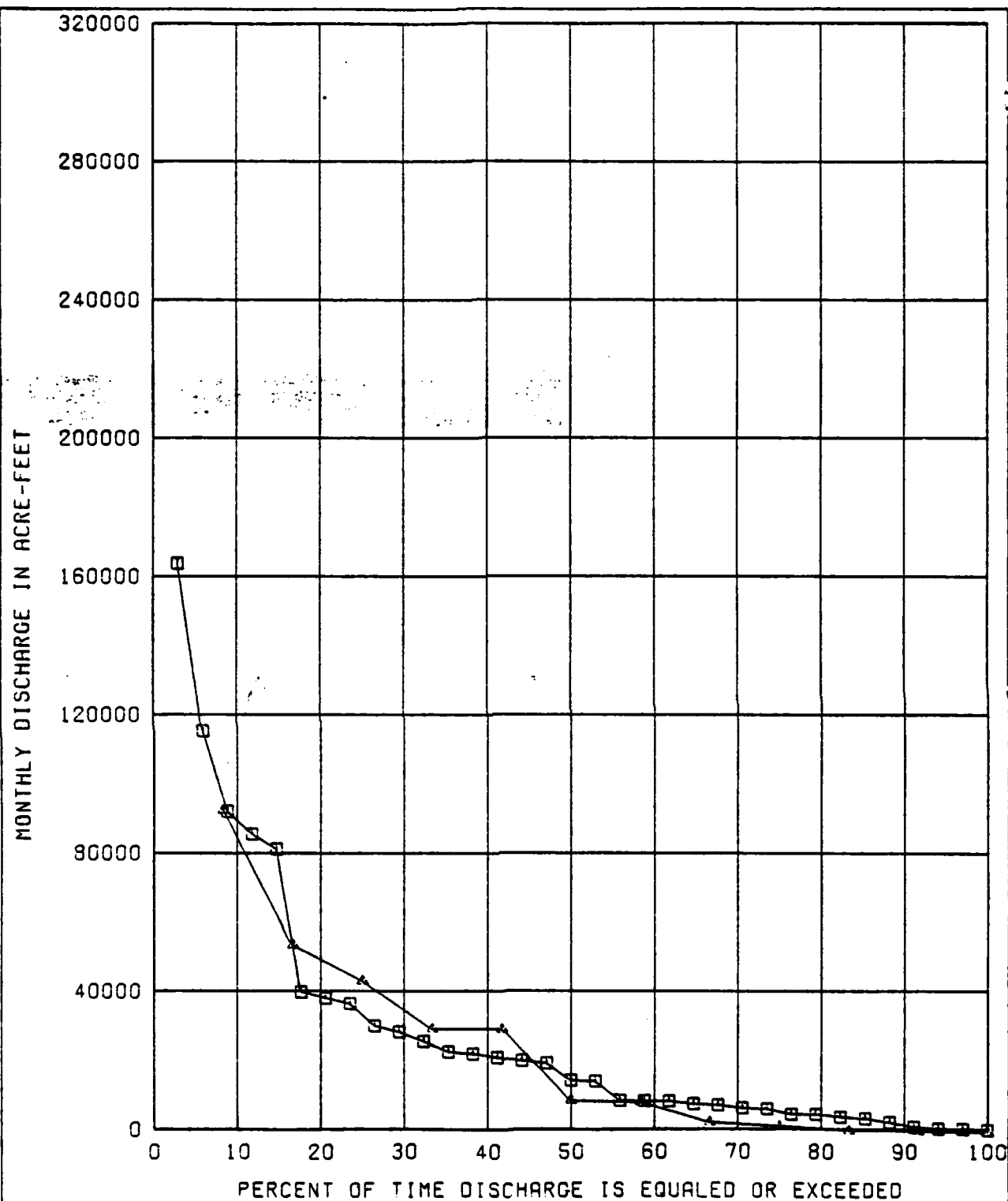
LEGEND

- PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1957)
- ▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1957-1979)

BRAZOS RIVER BASIN, TEXAS
STILLHOUSE HOLLOW LAKE
FLOW DURATION CURVES AT DAM SITE
MARCH FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1950

PLATE 15



LEGEND

□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1957)

▲ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1967-1979)

BRAZOS RIVER BASIN, TEXAS

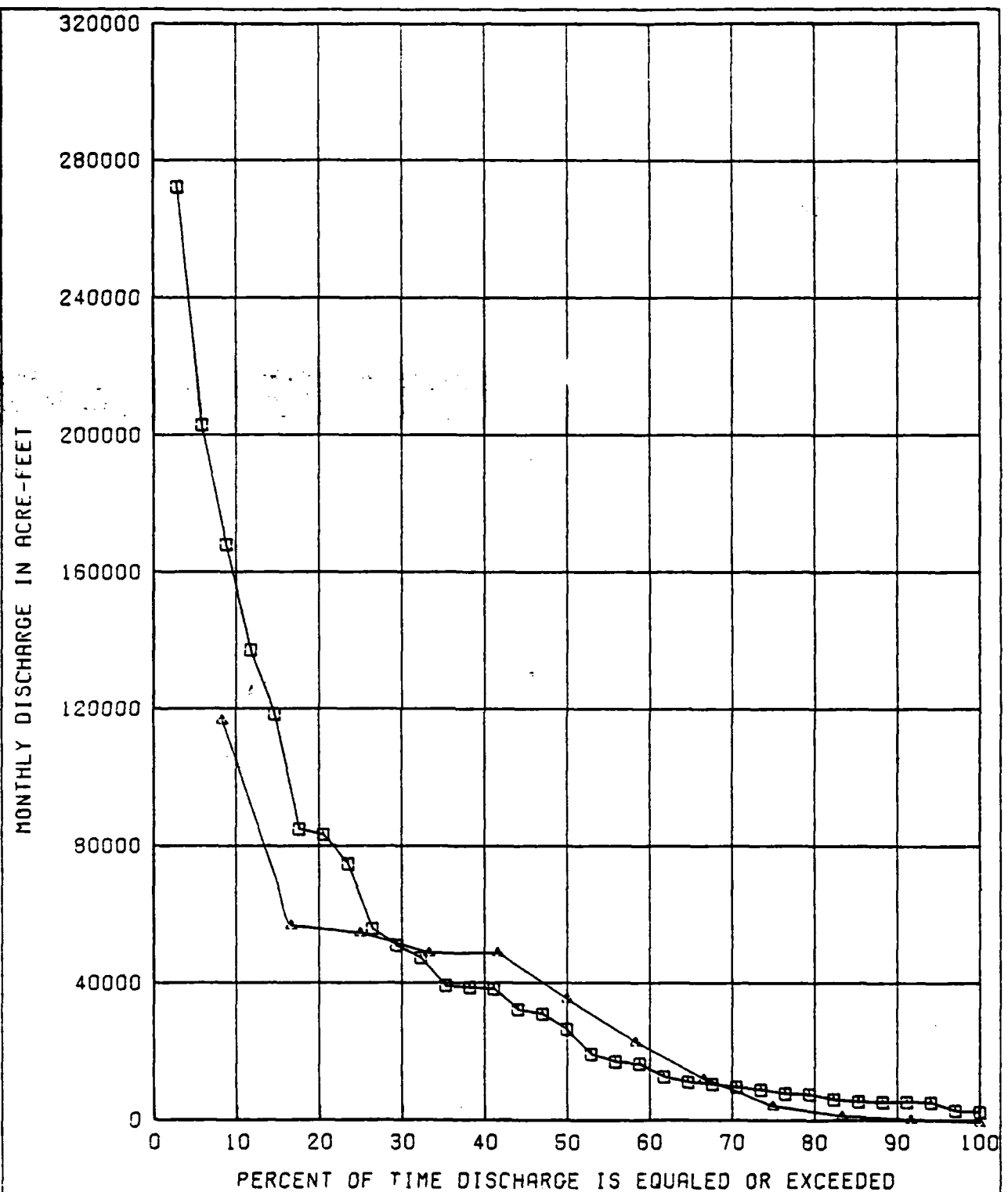
STILLHOUSE HOLLOW LAKE

FLOW DURATION CURVES AT DAM SITE

APRIL FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 16



LEGEND

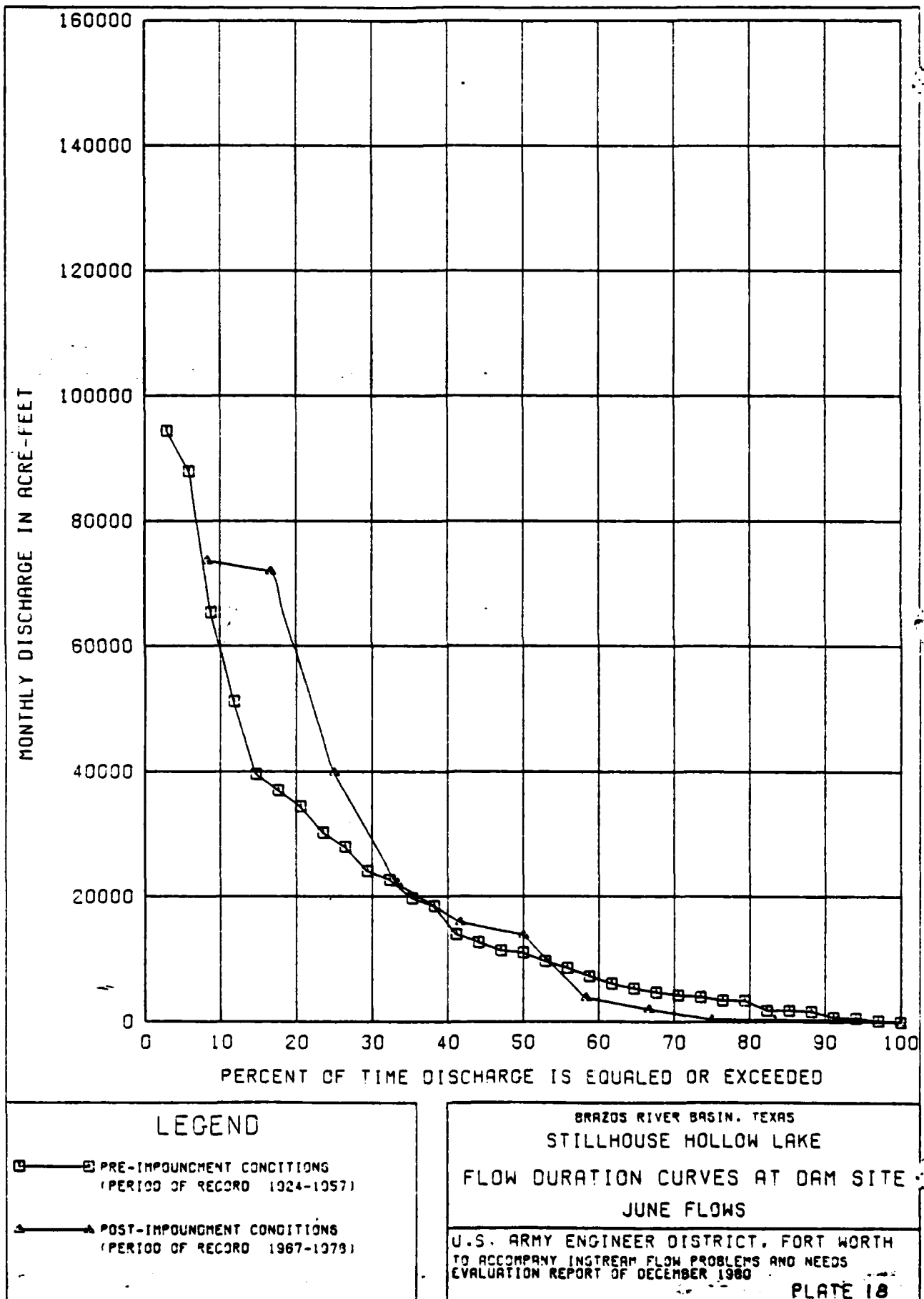
□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1957)

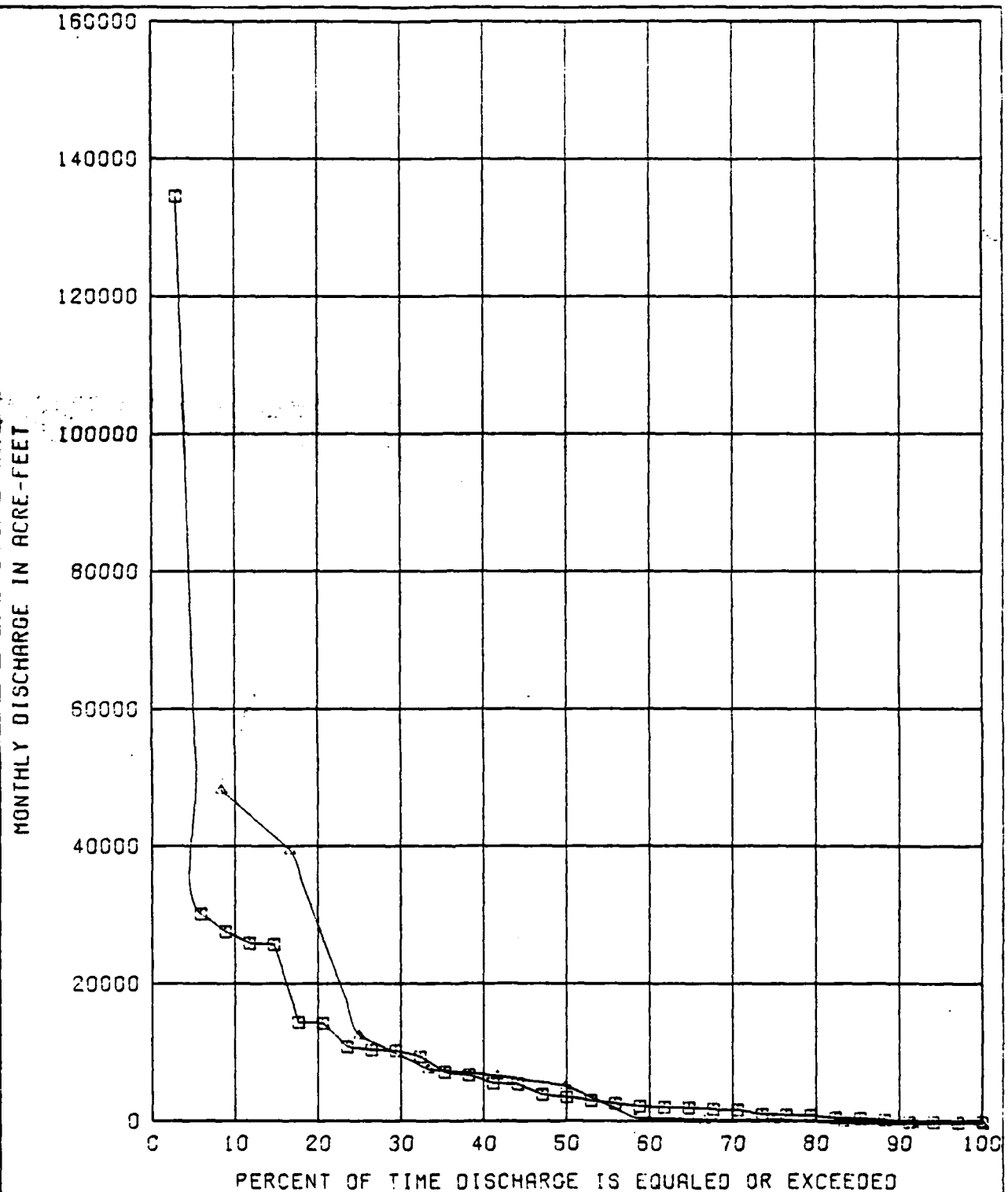
▲ — ▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1967-1979)

GRAZOS RIVER BASIN, TEXAS
STILLHOUSE HOLLOW LAKE
FLOW DURATION CURVES AT DAM SITE
MAY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 17





LEGEND

□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1957)

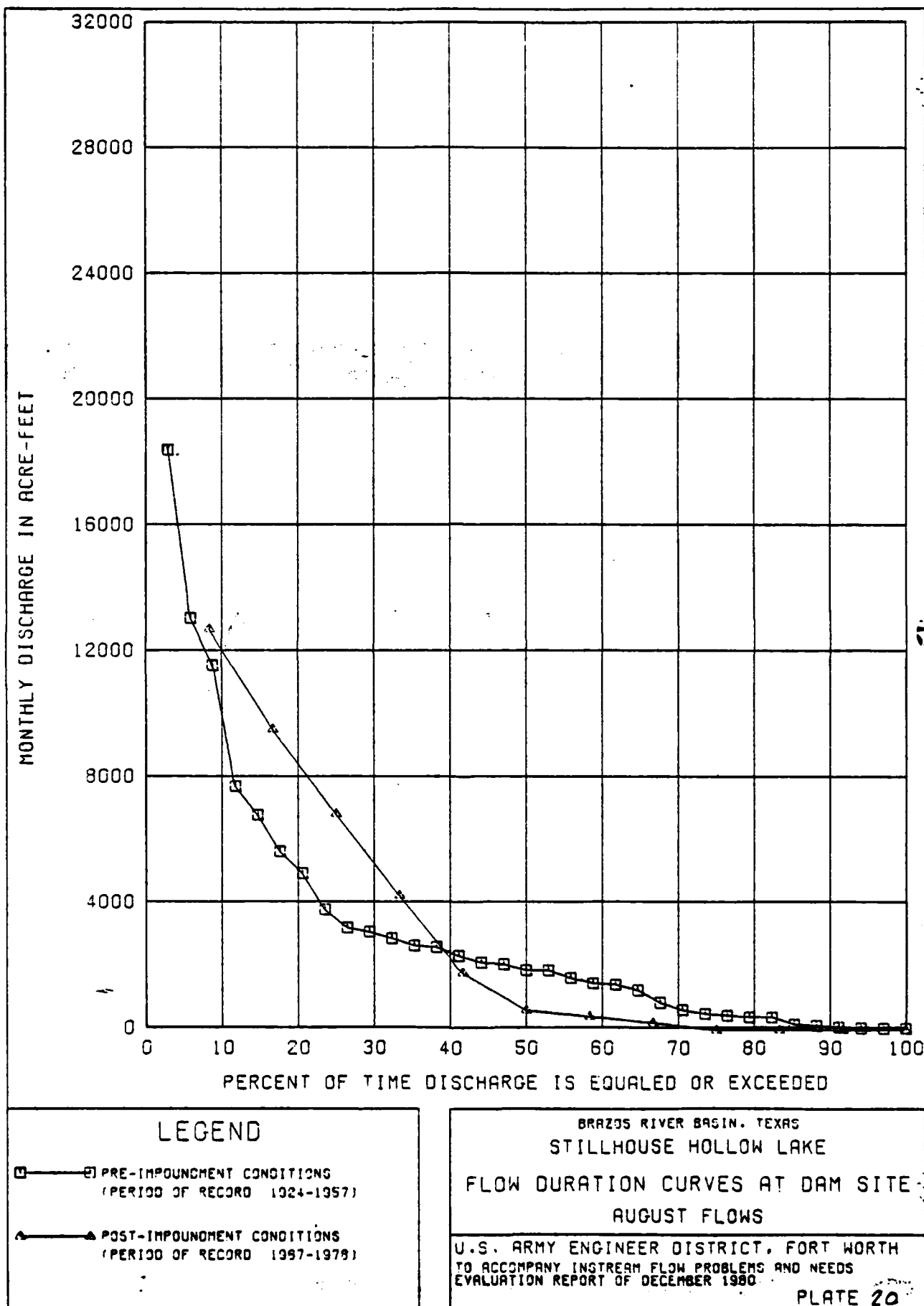
△ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1957-1979)

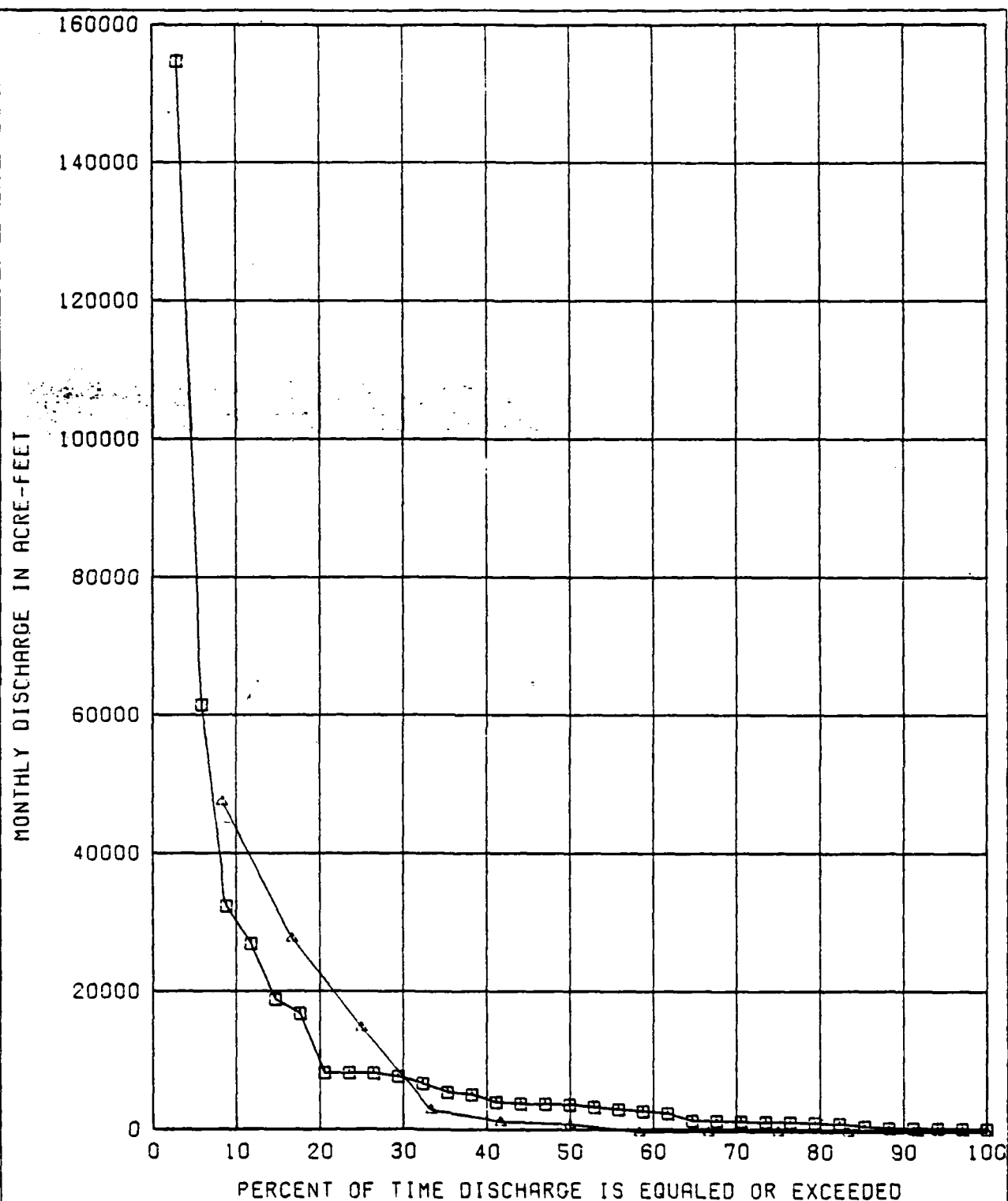
BRAZOS RIVER BASIN, TEXAS
STILLHOUSE HOLLOW LAKE

FLOW DURATION CURVES AT DAM SITE
JULY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 19





LEGEND

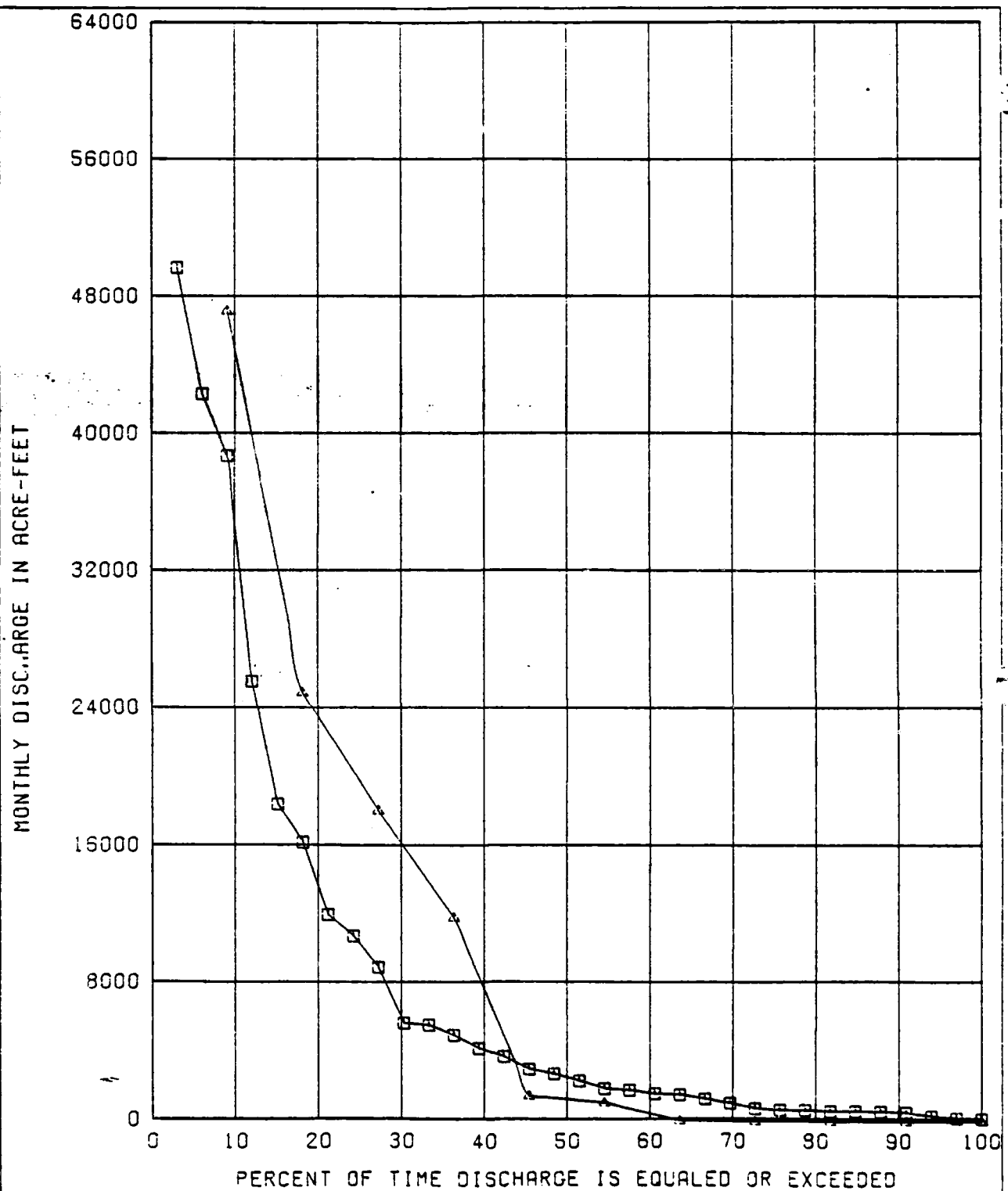
□ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1957)

▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1957-1979)

BRAZOS RIVER BASIN, TEXAS
STILLHOUSE HOLLOW LAKE
FLOW DURATION CURVES AT DAM SITE
SEPTEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 21



LEGEND

□ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1957)

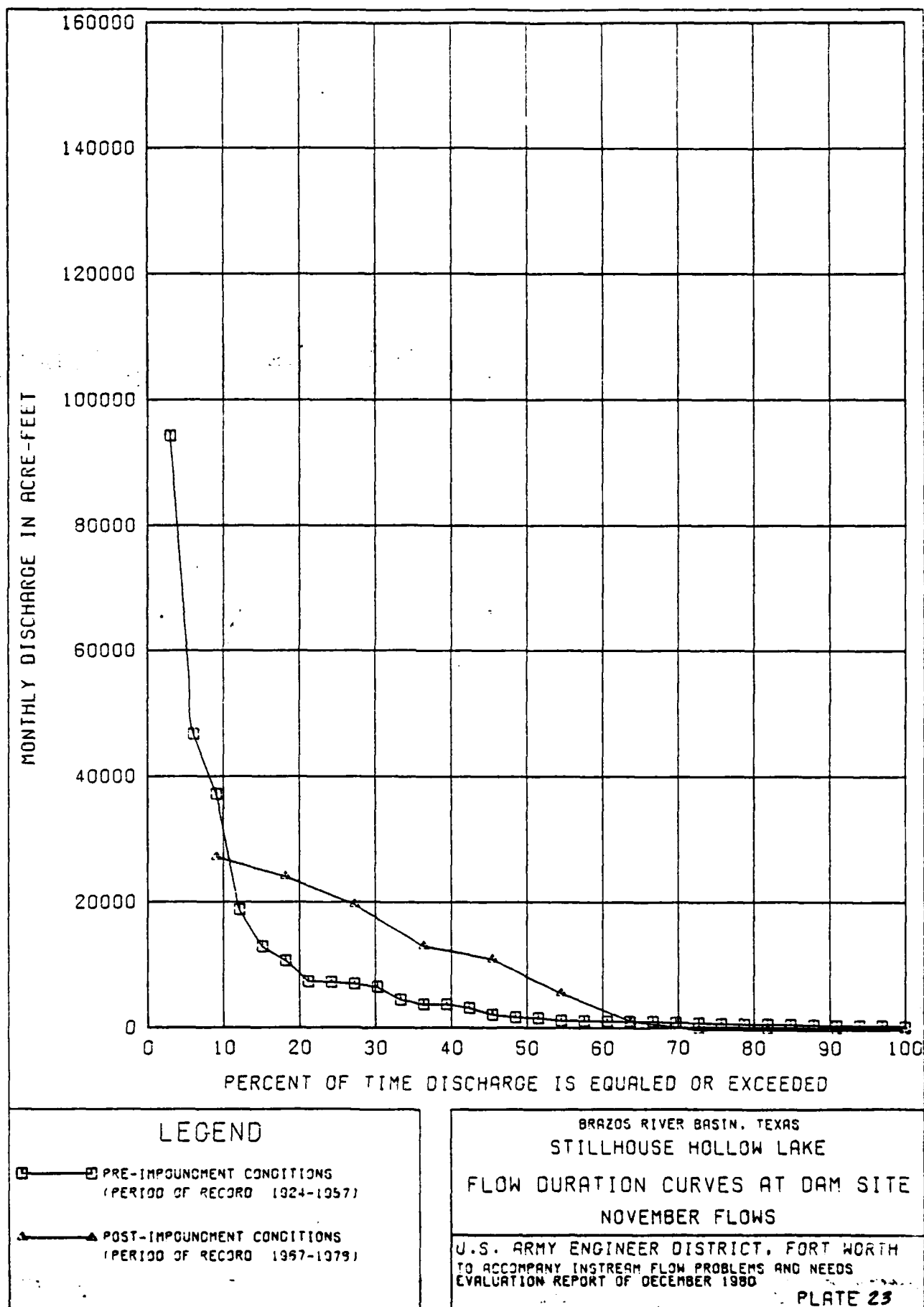
△ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1967-1979)

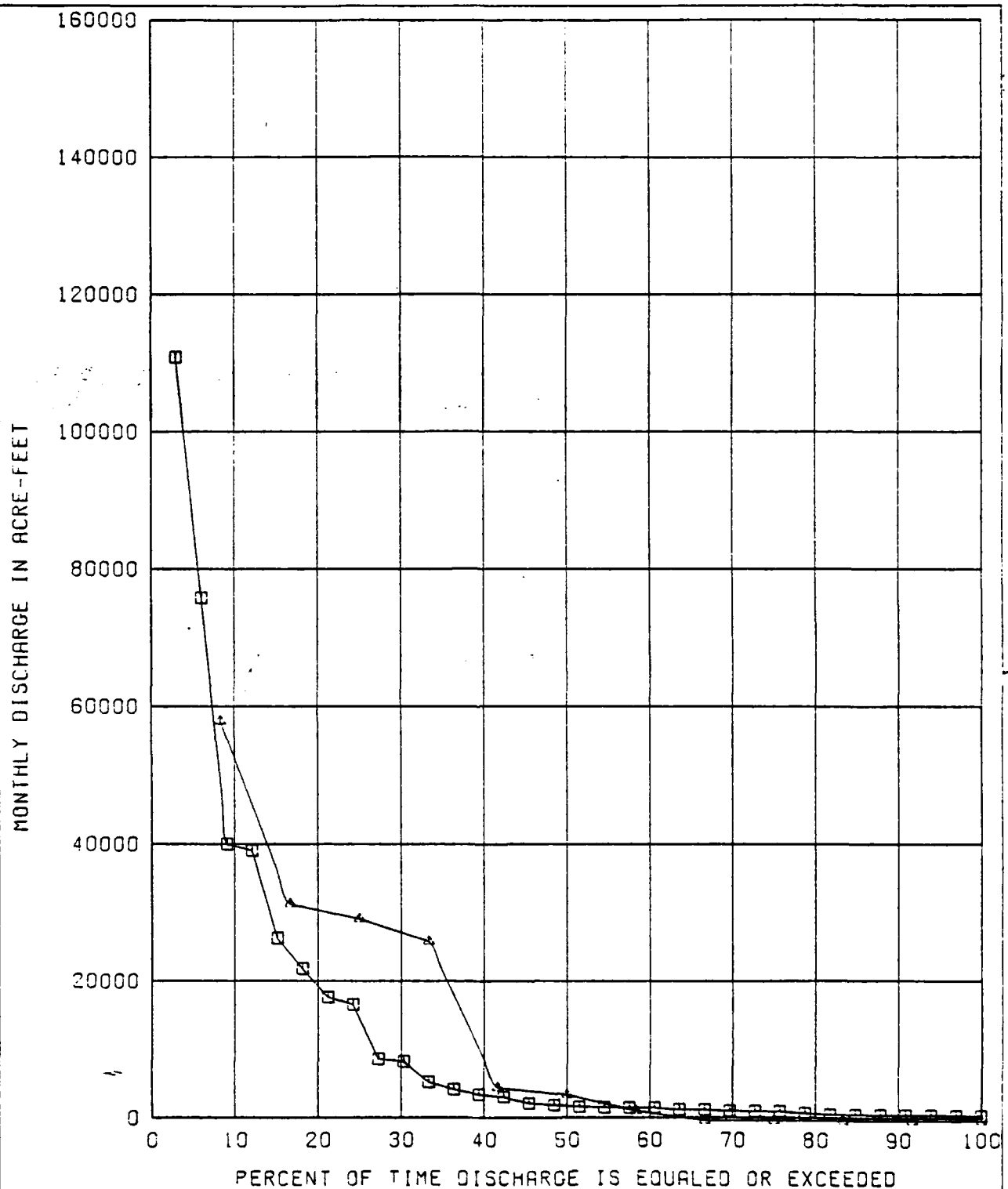
BRAZOS RIVER BASIN, TEXAS
STILLHOUSE HOLLOW LAKE

FLOW DURATION CURVES AT DAM SITE
OCTOBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 22





LEGEND

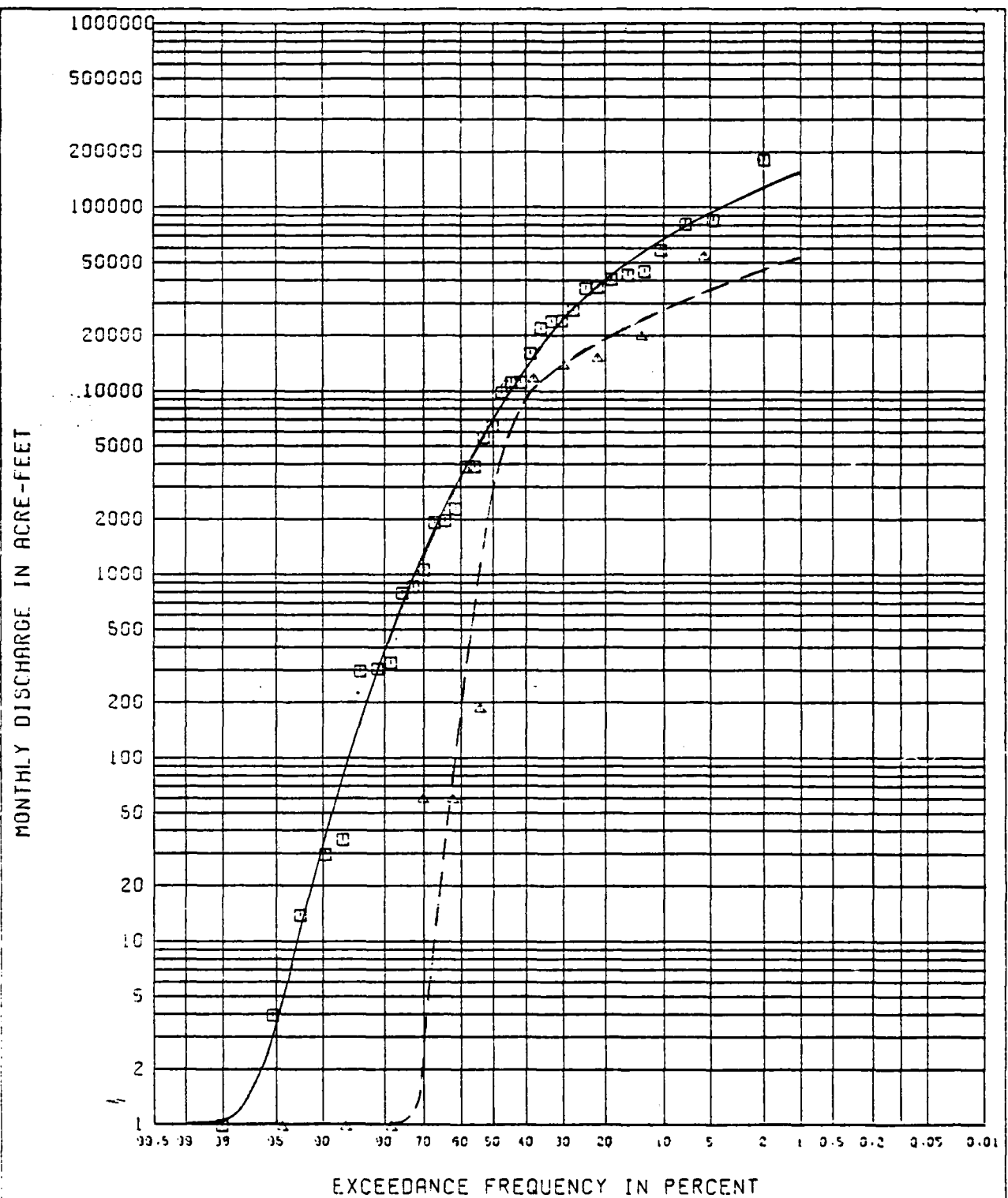
- — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1957)
- ▲ — ▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1957-1979)

BRAZOS RIVER BASIN, TEXAS
STILLHOUSE HOLLOW LAKE

FLOW DURATION CURVES AT DAM SITE
DECEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990.

PLATE 24



LEGEND

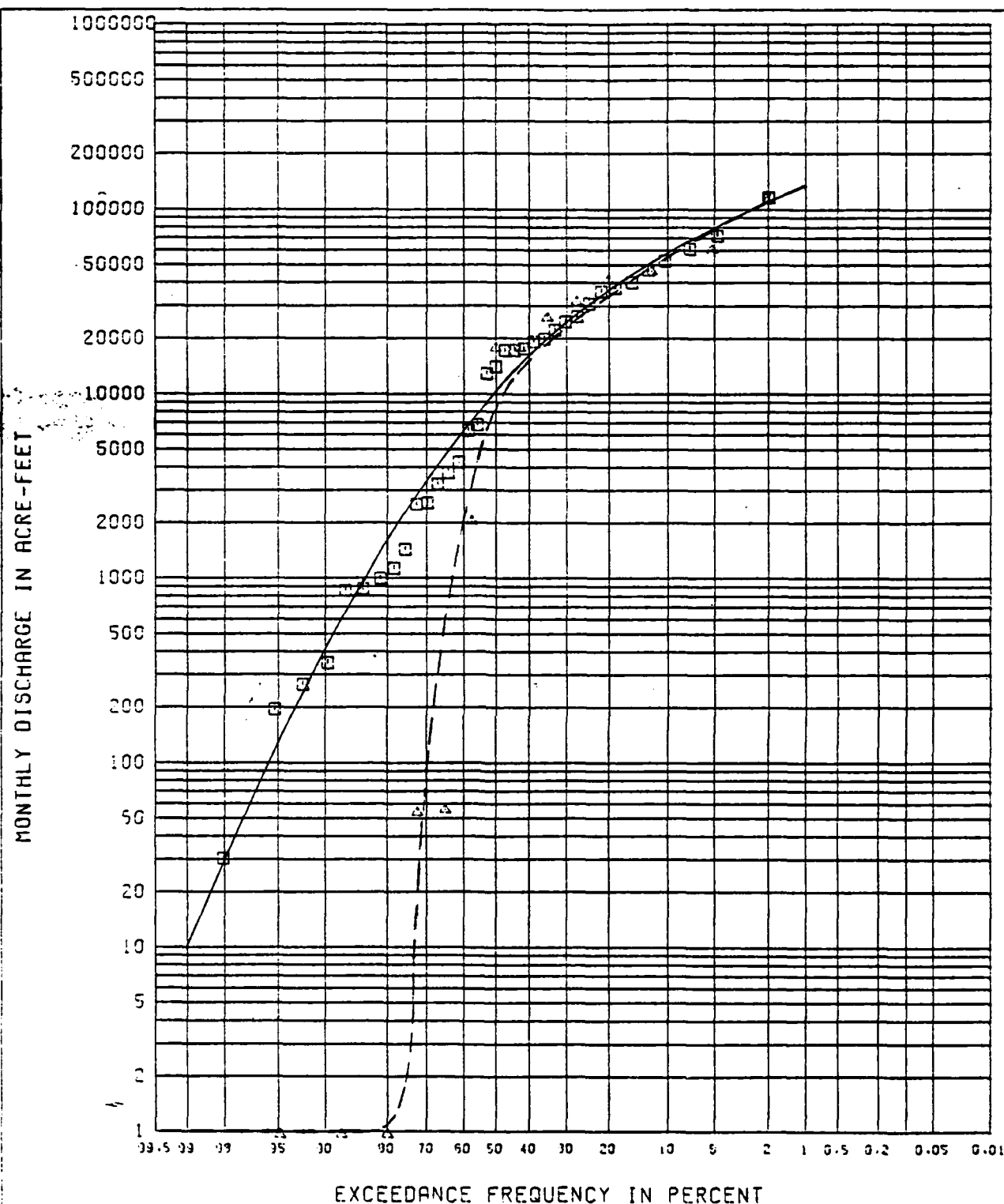
□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1959)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1966-1979)

BRAZOS RIVER BASIN, TEXAS
SOMERVILLE LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
JANUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE F-1



LEGEND

- — PRE-IMPOUNDMENT CONDITIONS
 (PERIOD OF RECORD 1924-1959)
- △ — POST-IMPOUNDMENT CONDITIONS
 (PERIOD OF RECORD 1966-1979)

BRAZOS RIVER BASIN, TEXAS

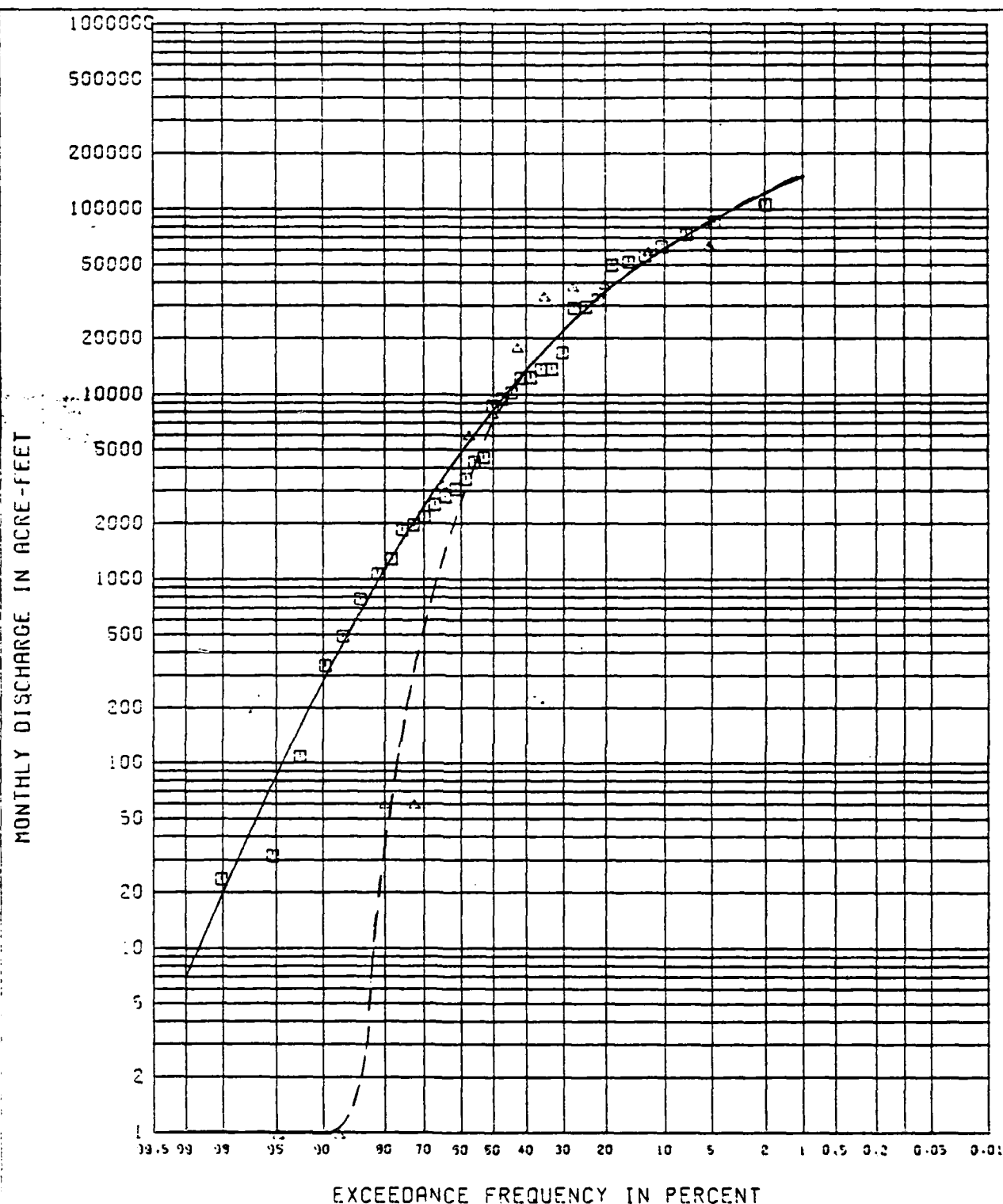
SOMERVILLE LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

FEBRUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
 TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
 EVALUATION REPORT OF DECEMBER 1980

PLATE 2



LEGEND

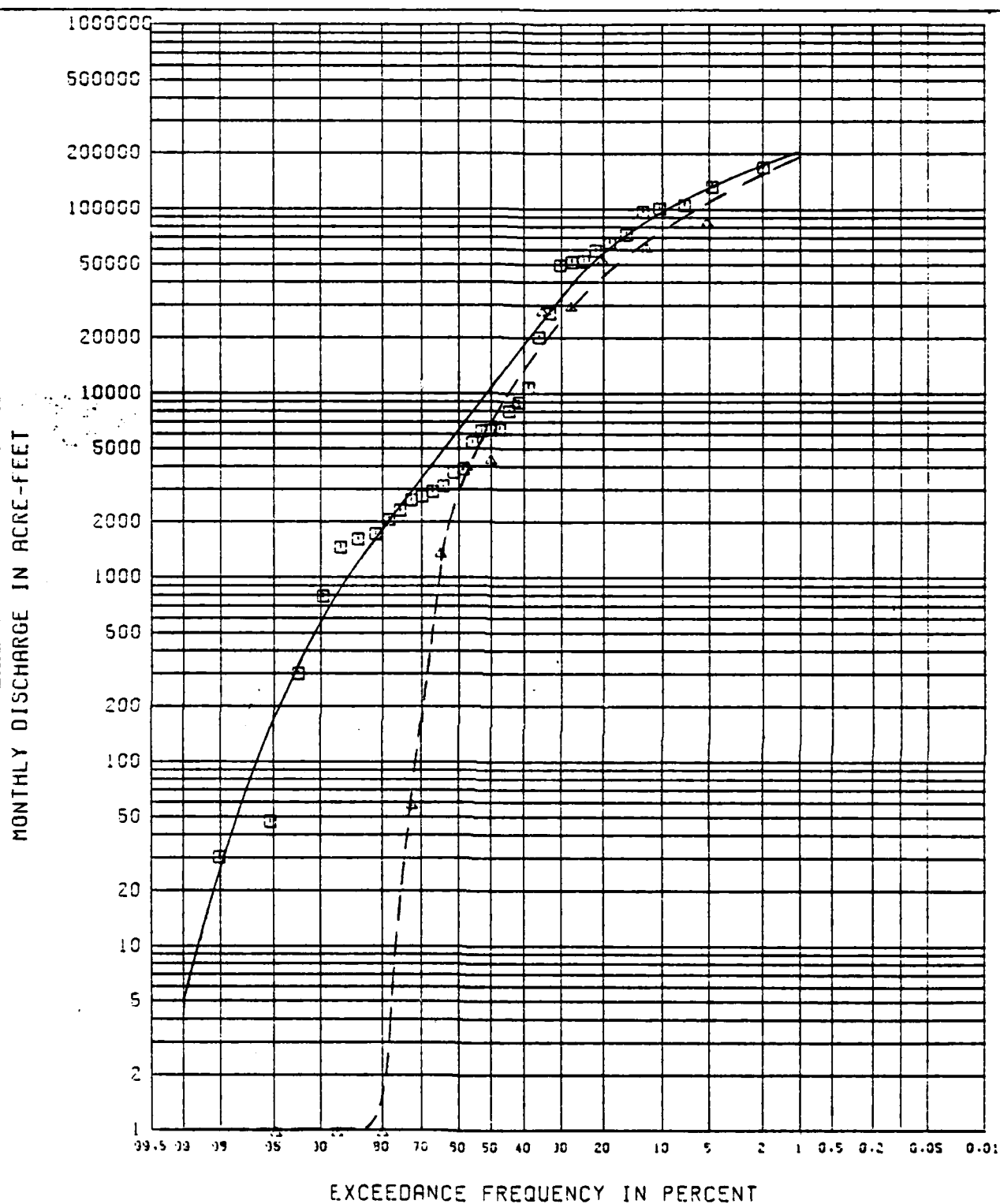
—■— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1959)

- - -▲- POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1956-1979)

BRAZOS RIVER BASIN, TEXAS
SOMERVILLE LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
MARCH FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 3



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1953)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1966-1979)

BRAZOS RIVER BASIN, TEXAS

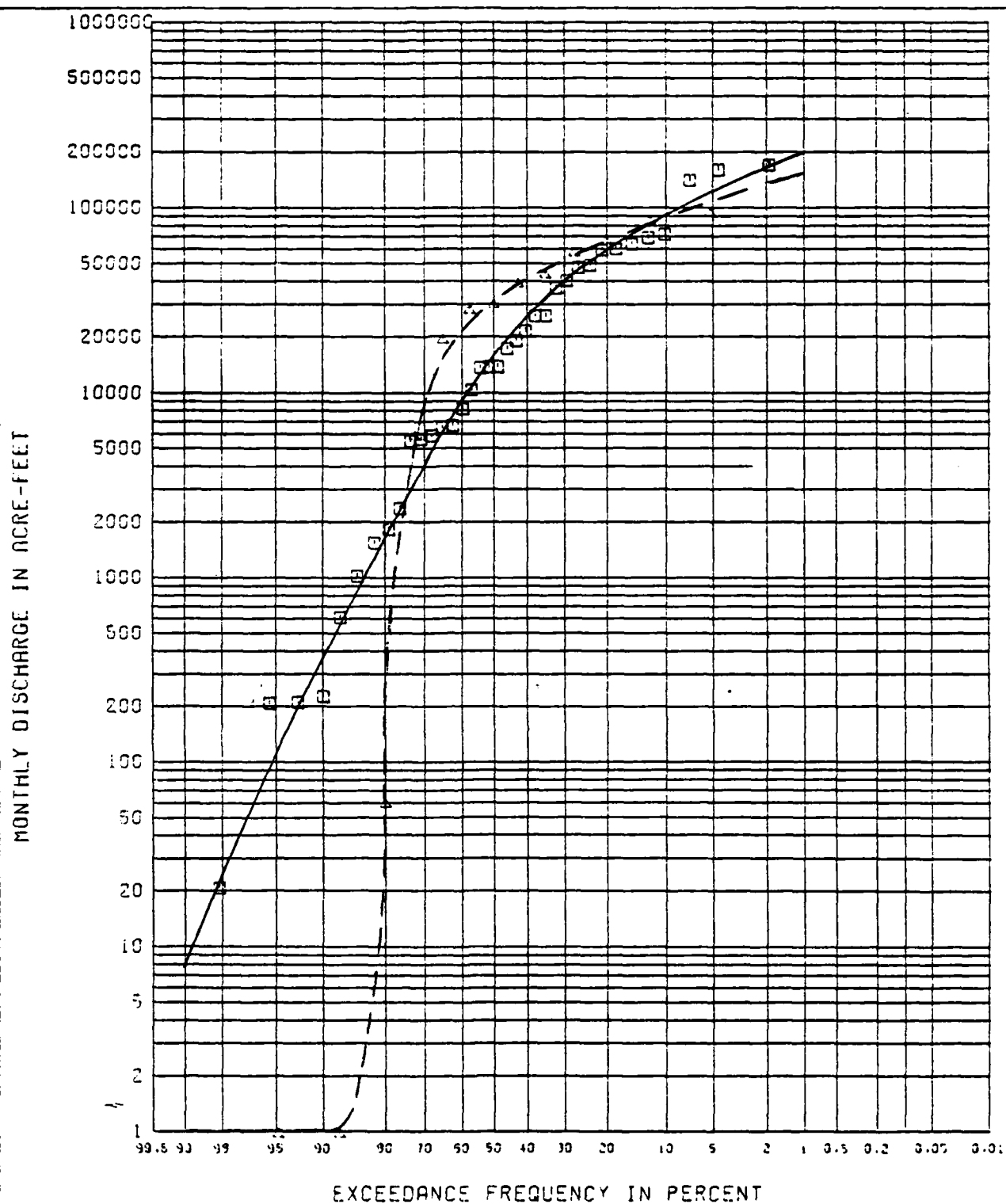
SOMERVILLE LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

APRIL FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 4



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1959)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1966-1979)

BRAZOS RIVER BASIN, TEXAS

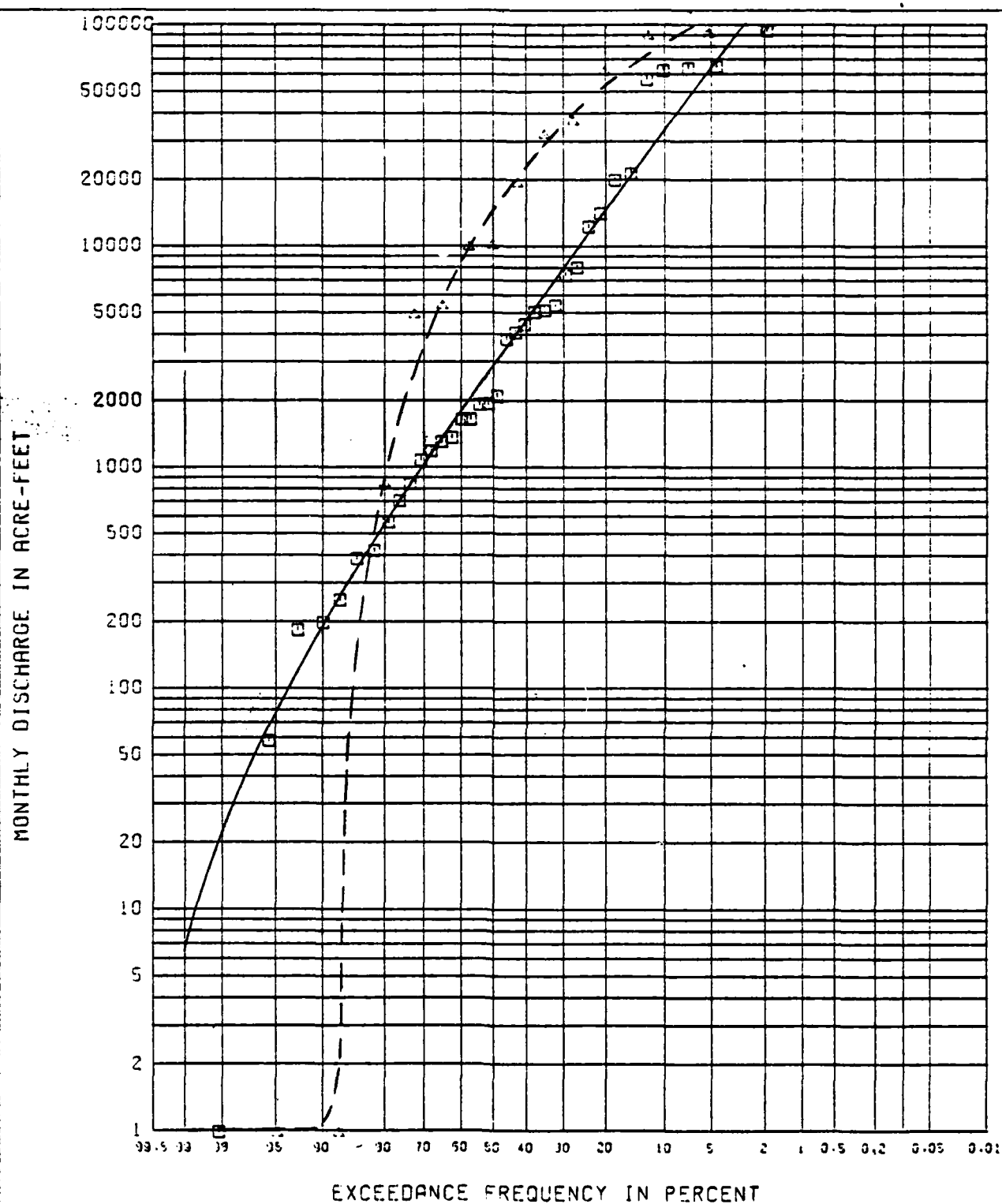
SOMERVILLE LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

MAY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 5



LEGEND

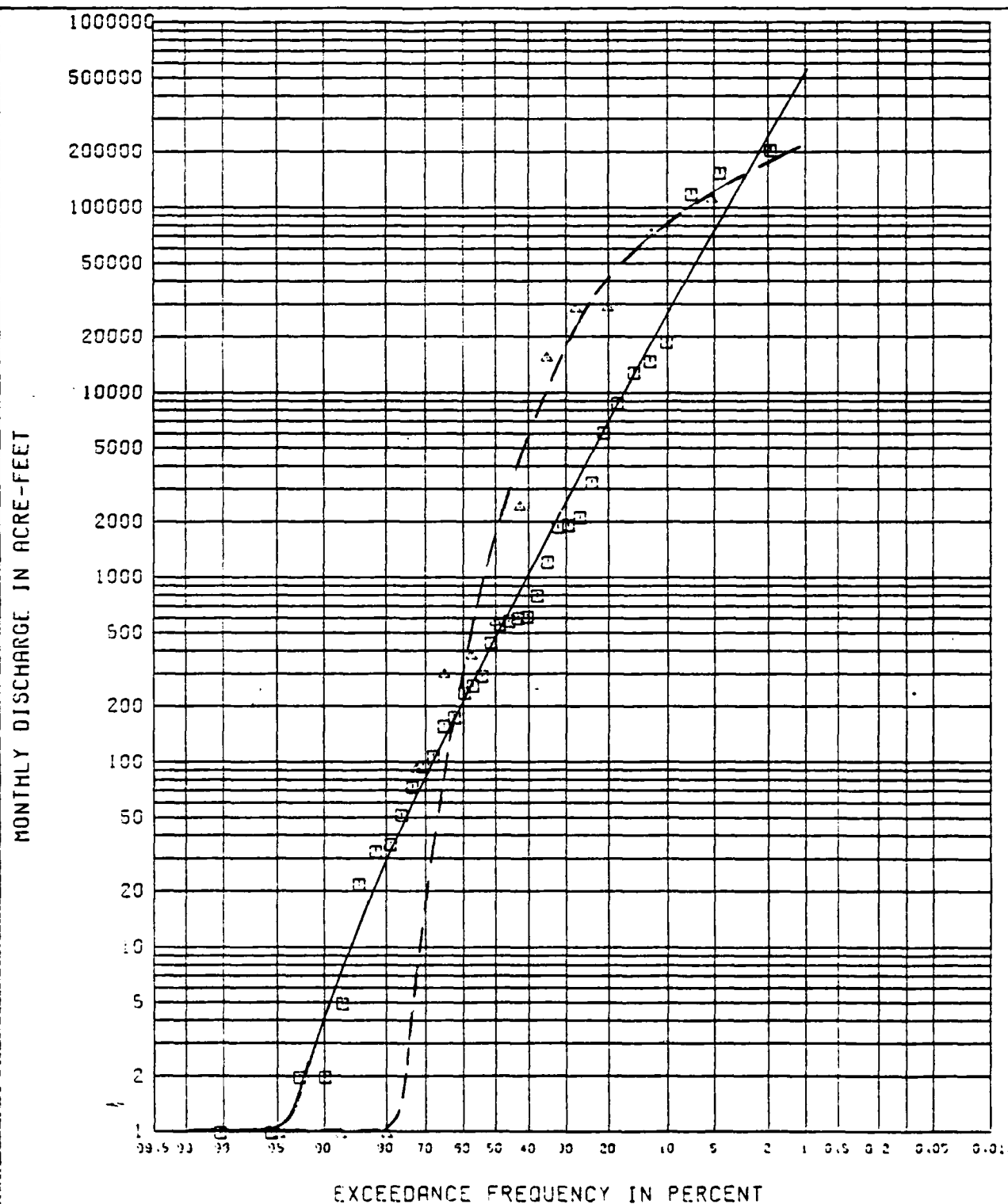
—■— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1959)

-▲- POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1966-1979)

BRAZOS RIVER BASIN, TEXAS
SOMERVILLE LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
JUNE FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 6



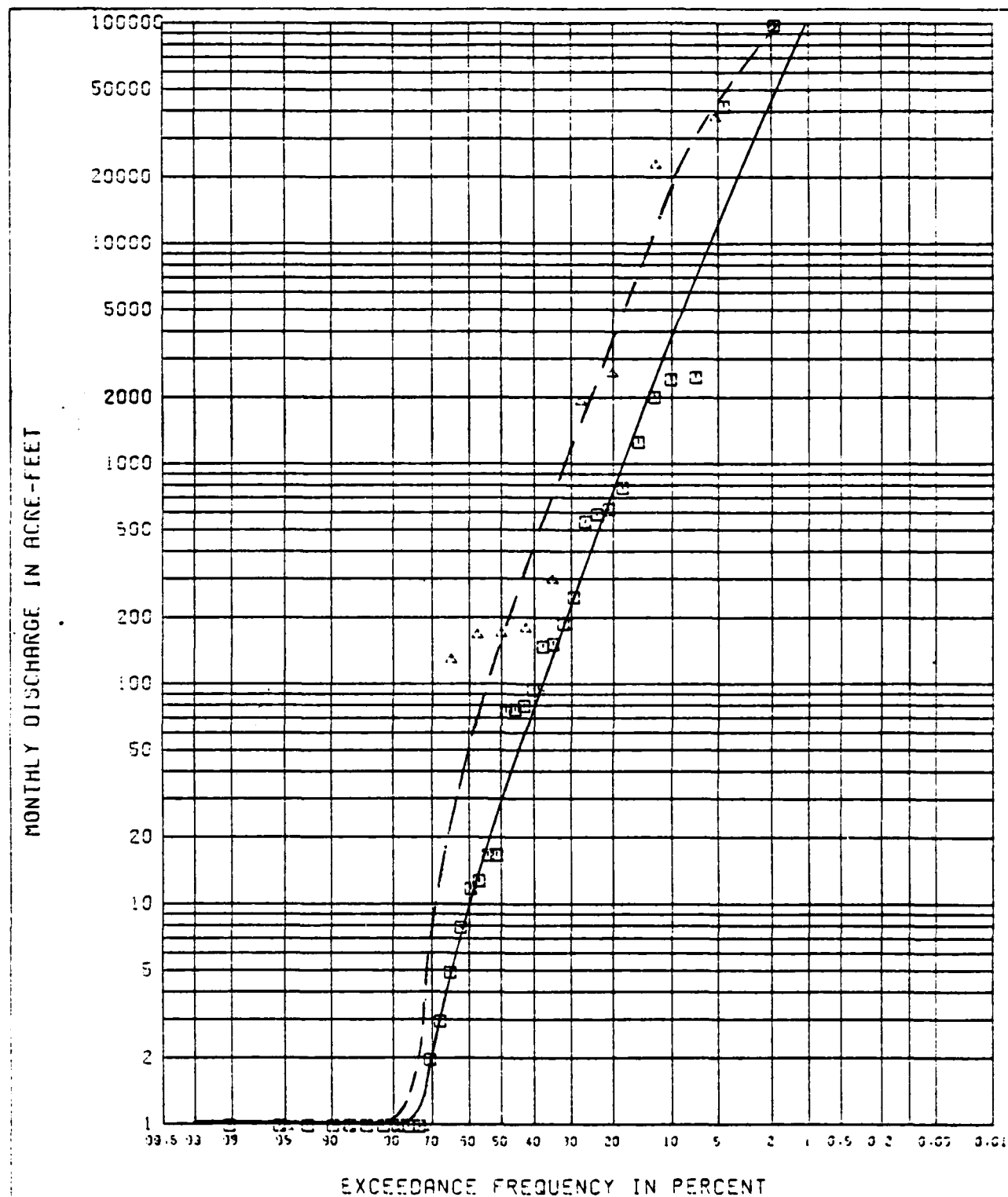
LEGEND

- PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1959)
- - - POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1966-1979)

BRAZOS RIVER BASIN, TEXAS
SOMERVILLE LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
JULY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 7



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1959)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1966-1979)

BRAZOS RIVER BASIN, TEXAS

SOMERVILLE LAKE

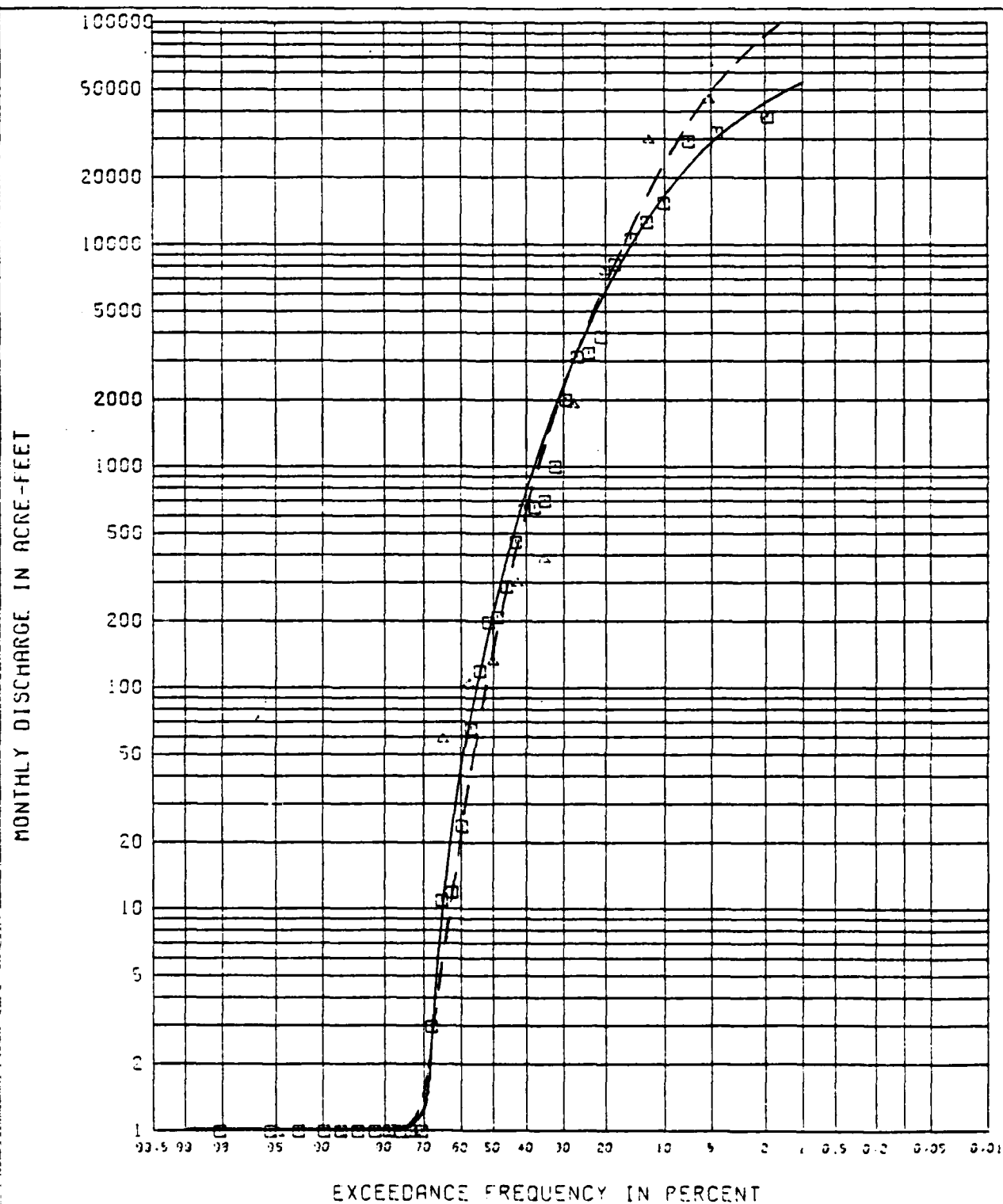
DISCHARGE-FREQUENCY RELATIONS

AT DAM SITE

AUGUST FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 8



LEGEND

—■— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1953)

- - - ▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1966-1979)

BRAZOS RIVER BASIN, TEXAS

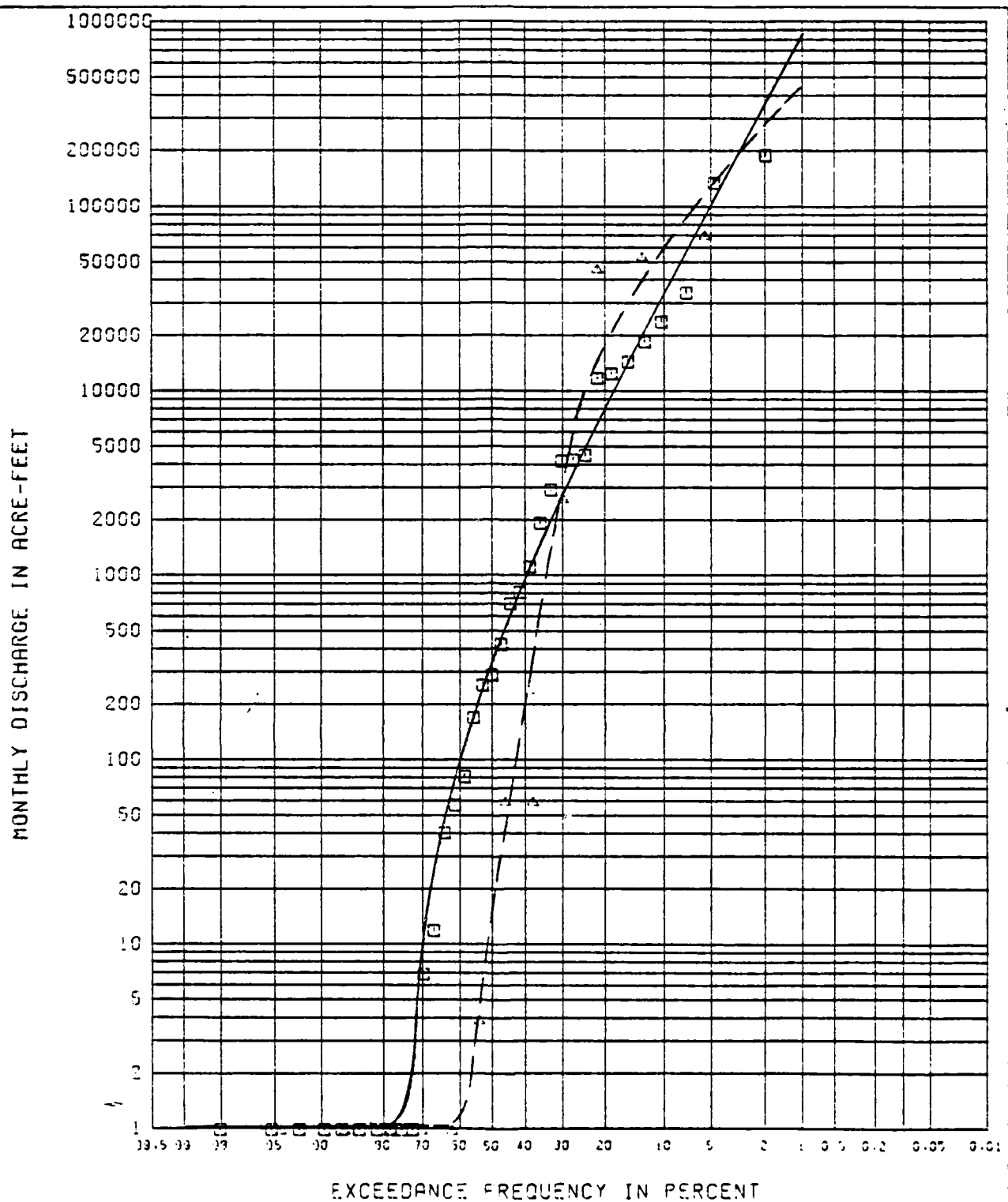
SOMERVILLE LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

SEPTEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 9



LEGEND

- — □ PRE-IMPOUNDMENT CONDITIONS
 (PERIOD OF RECORD 1924-1953)
- △ — △ POST-IMPOUNDMENT CONDITIONS
 (PERIOD OF RECORD 1955-1979)

BRAZOS RIVER BASIN, TEXAS

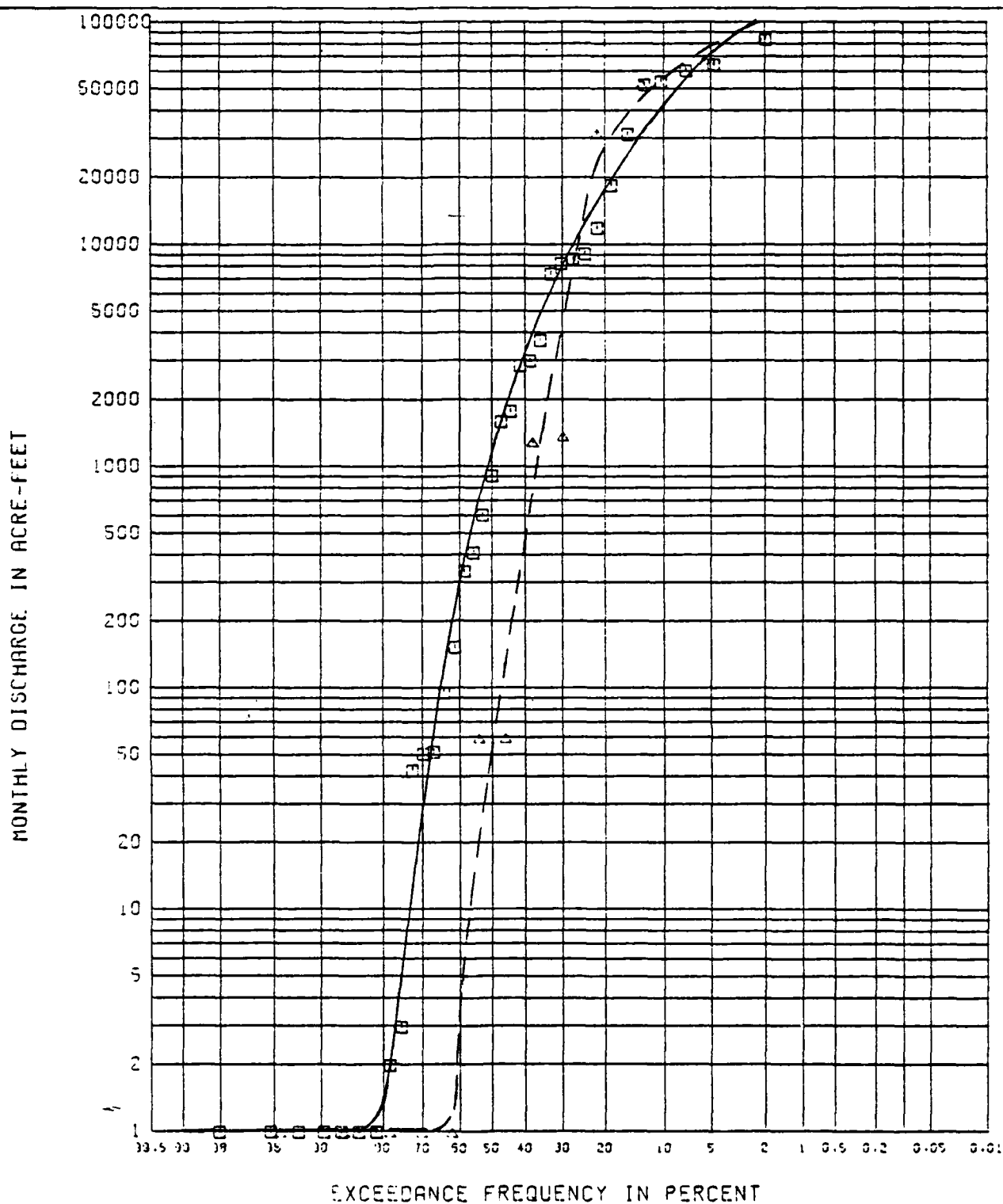
SOMERVILLE LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

OCTOBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
 TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
 EVALUATION REPORT OF DECEMBER 1980

PLATE 10



LEGEND

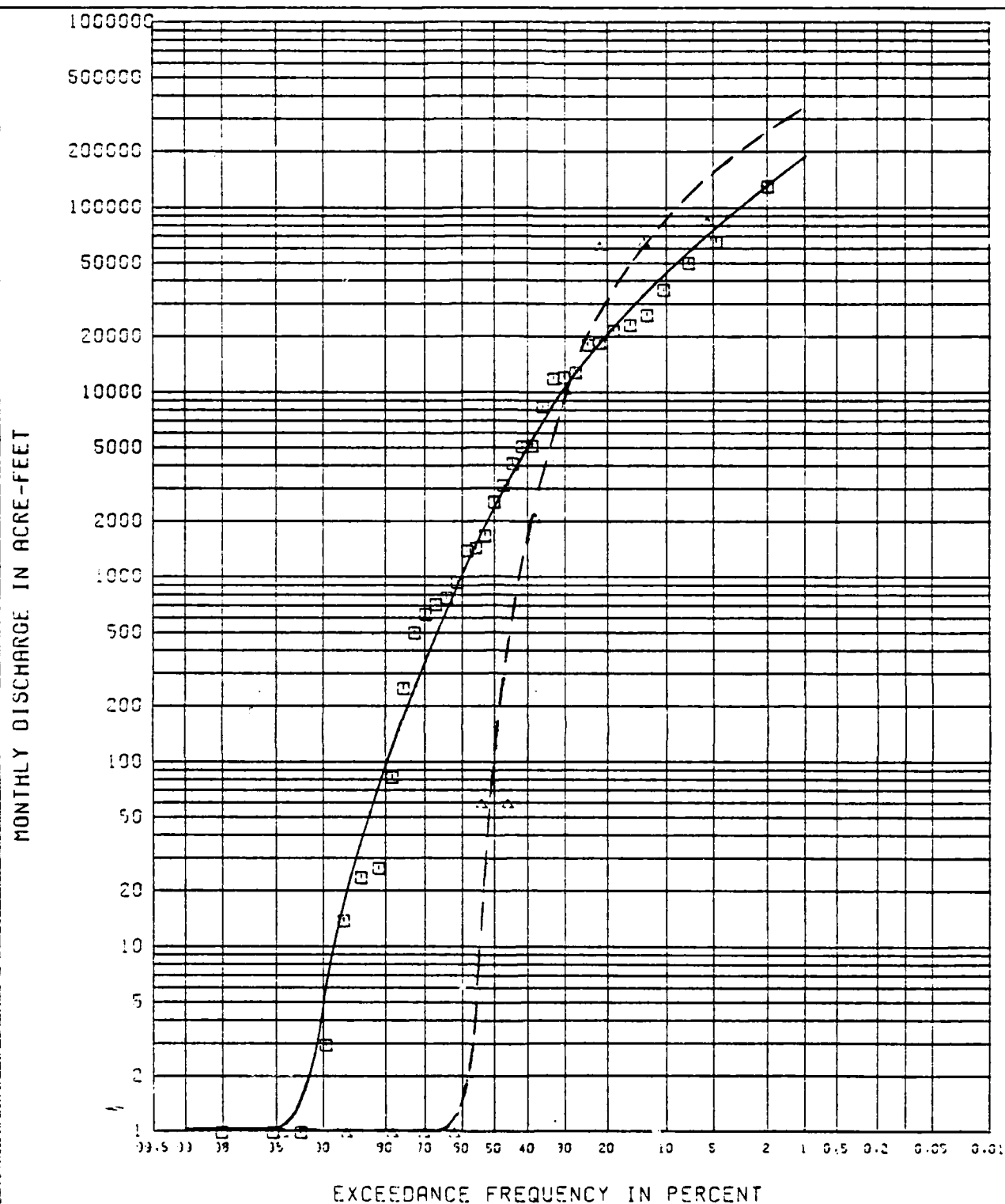
—■— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1959)

- - -△- - POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1955-1979)

BRAZOS RIVER BASIN, TEXAS
SOMERVILLE LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
NOVEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE II



LEGEND

—□— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1959)

—△— POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1958-1979)

BRAZOS RIVER BASIN, TEXAS

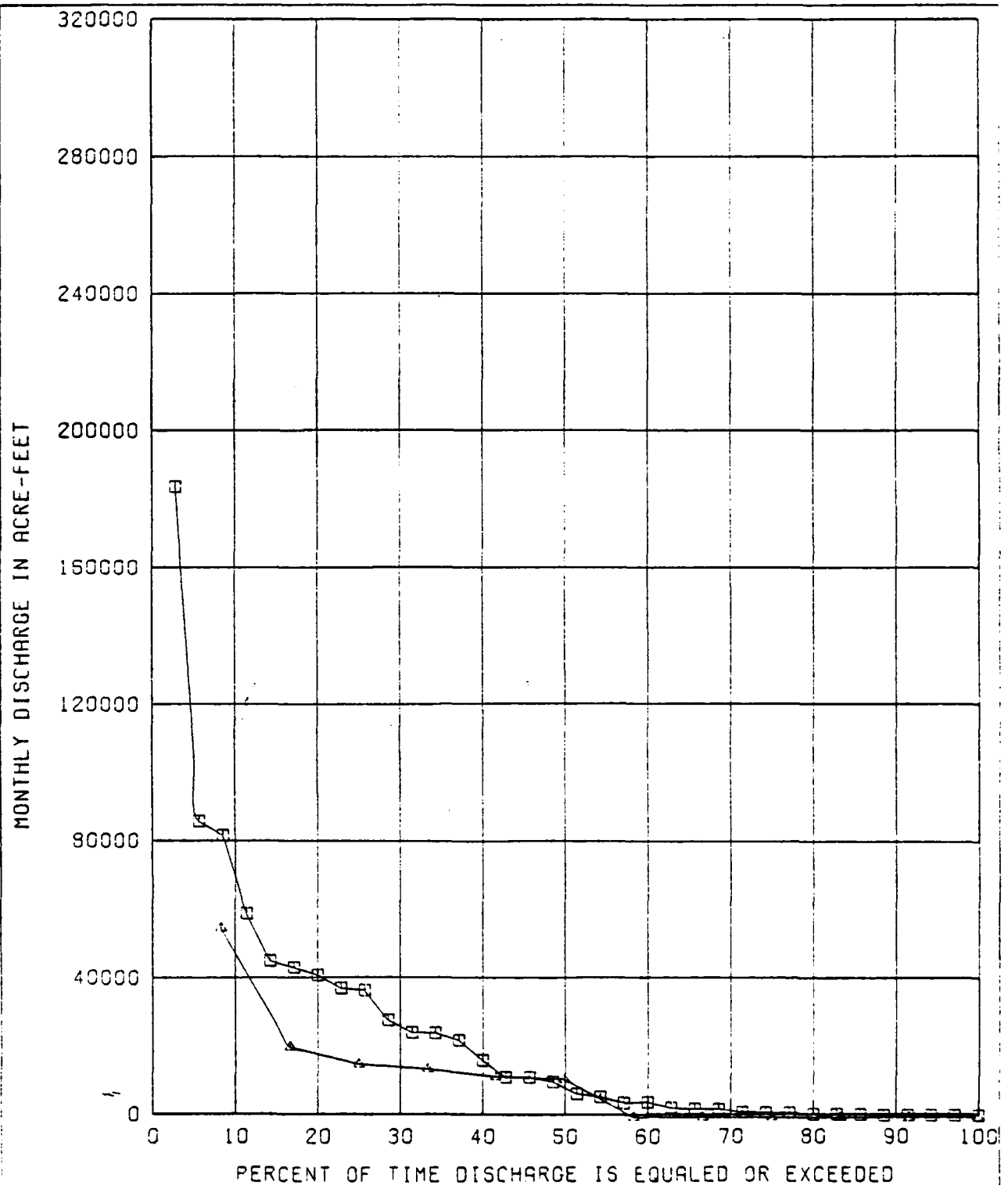
SOMERVILLE LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

DECEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 12



LEGEND

□ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1953)

△ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1966-1979)

BRAZOS RIVER BASIN, TEXAS

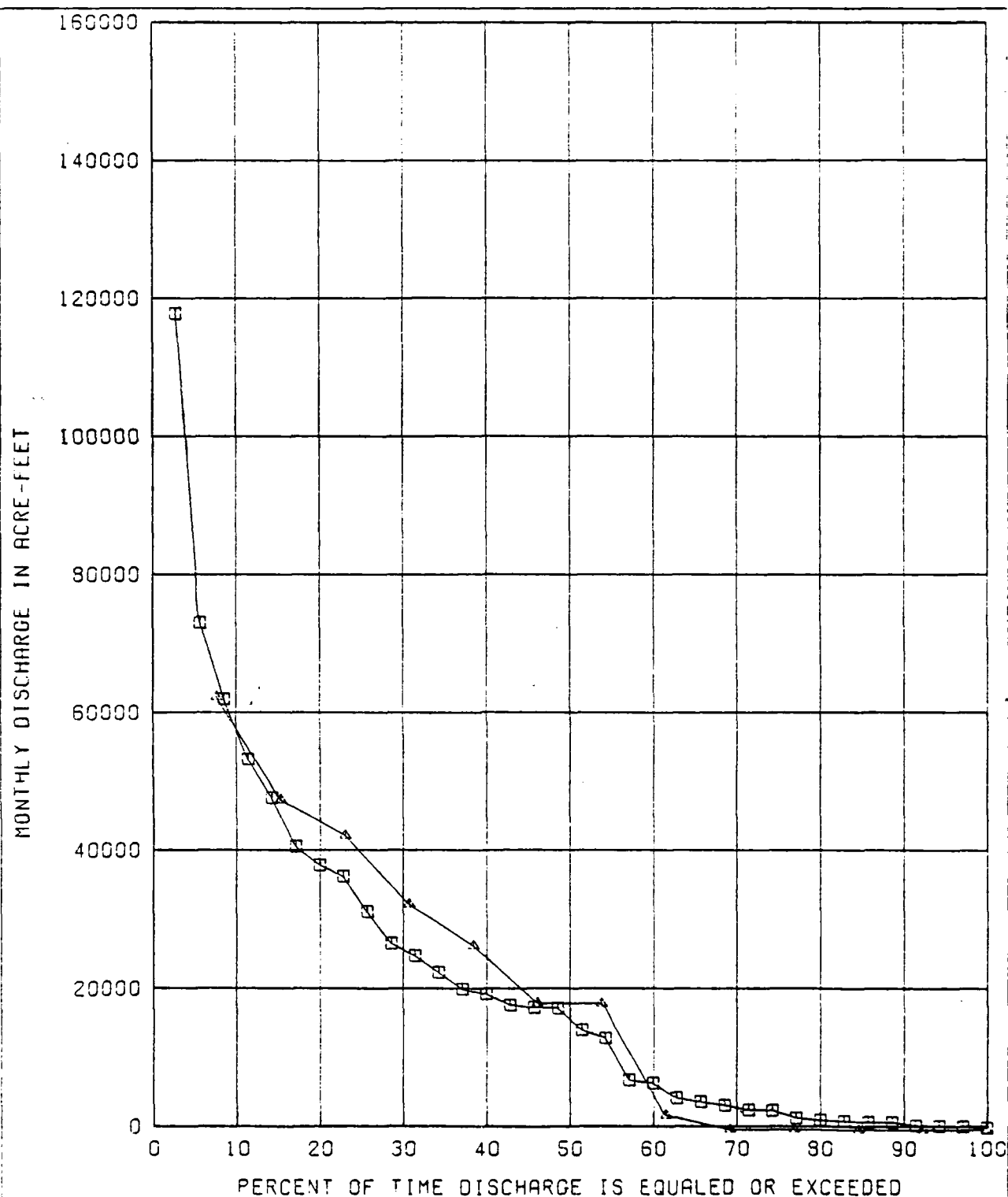
SOMERVILLE LAKE

FLOW DURATION CURVES AT DAM SITE

JANUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 13



LEGEND

□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1953)

△ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1966-1979)

BRAZOS RIVER BASIN, TEXAS

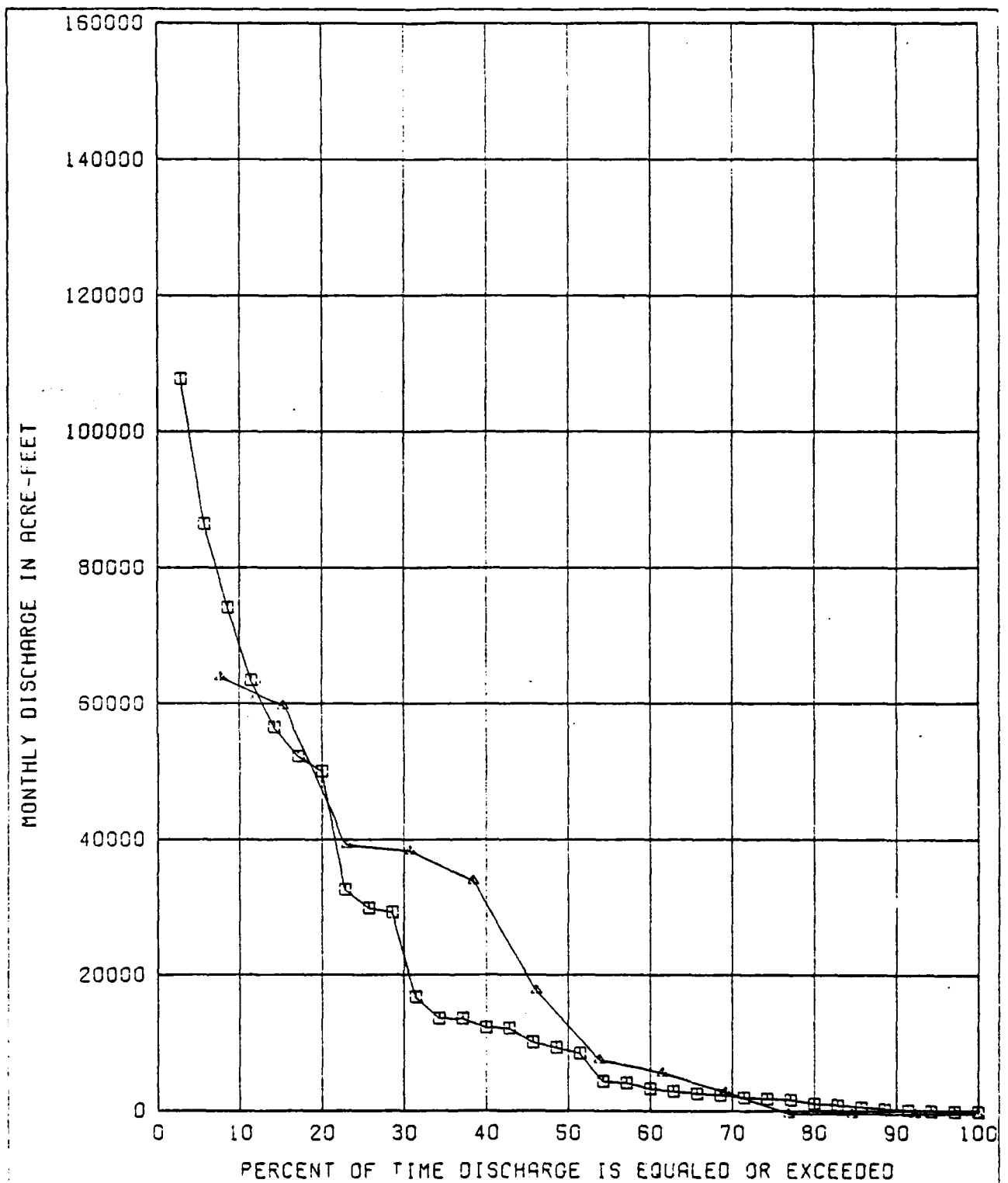
SOMERVILLE LAKE

FLOW DURATION CURVES AT DAM SITE

FEBRUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 14



LEGEND

□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1953)

▲ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1955-1979)

BRAZOS RIVER BASIN, TEXAS

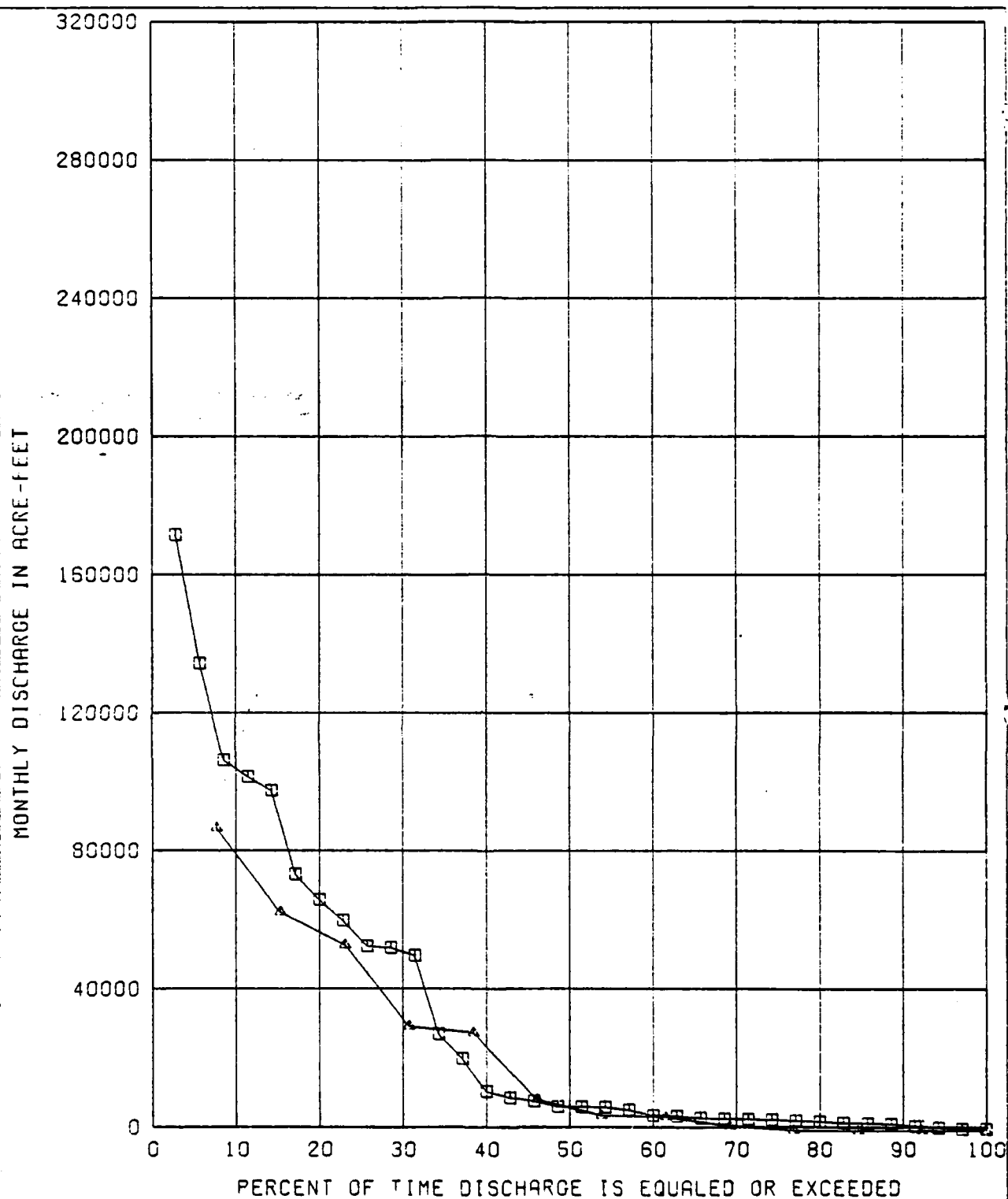
SOMERVILLE LAKE

FLOW DURATION CURVES AT DAM SITE

MARCH FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 15



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1959)

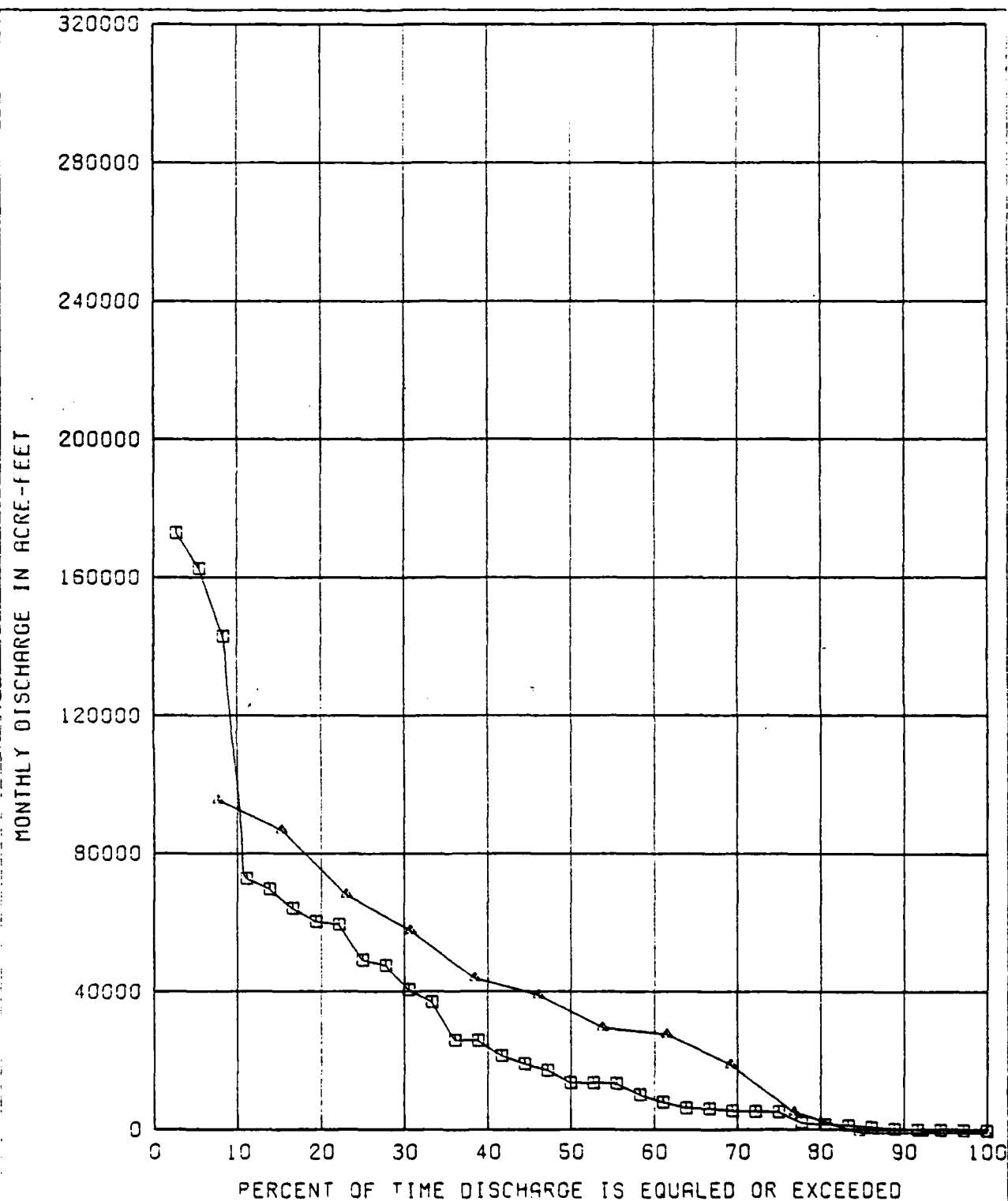
▲ — ▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1955-1979)

BRAZOS RIVER BASIN, TEXAS
SOMERVILLE LAKE

FLOW DURATION CURVES AT DAM SITE
APRIL FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 16



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1959)

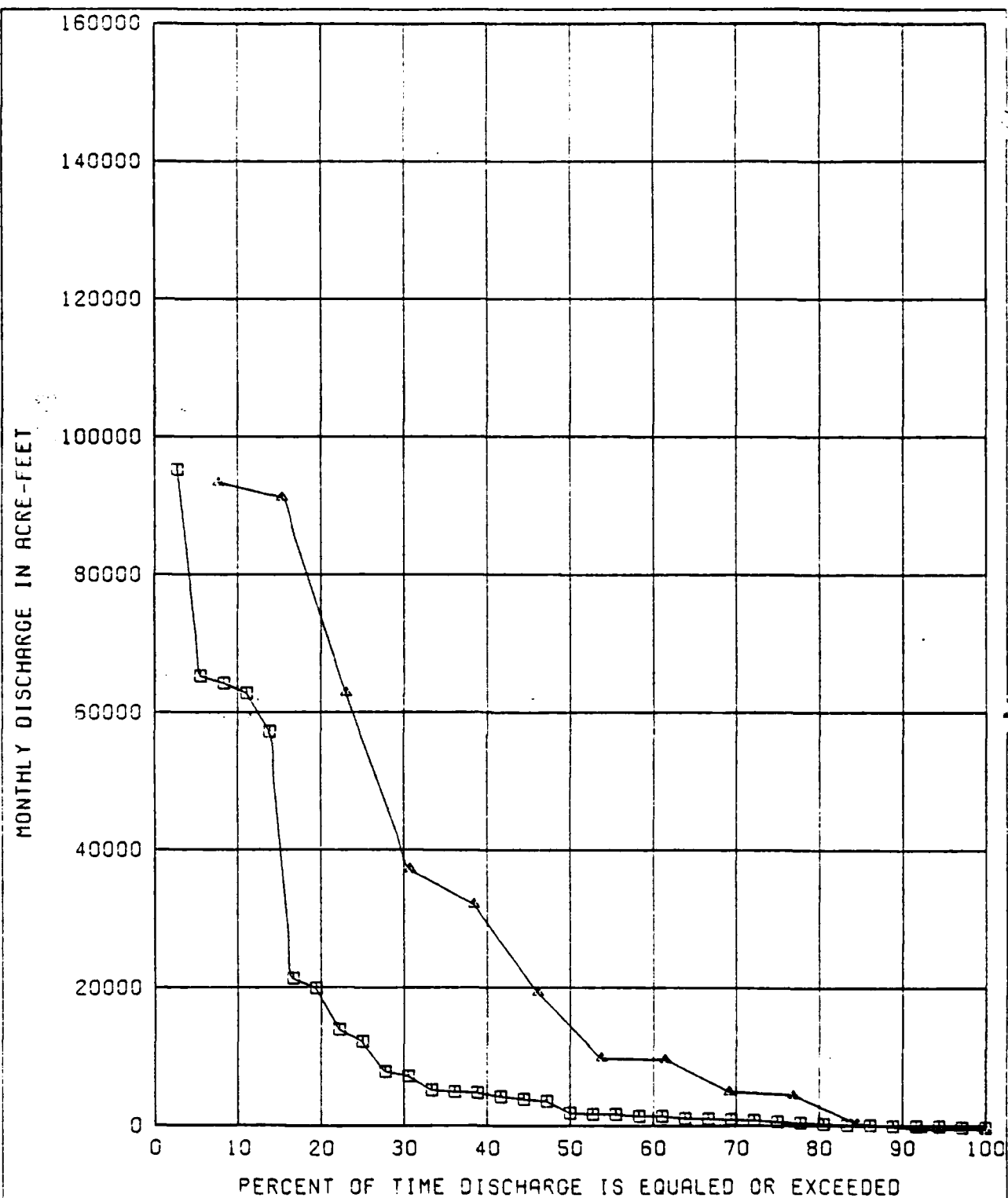
▲ — ▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1959-1979)

BRAZOS RIVER BASIN, TEXAS
SOMERVILLE LAKE

FLOW DURATION CURVES AT DAM SITE
MAY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 17



LEGEND

□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1959)

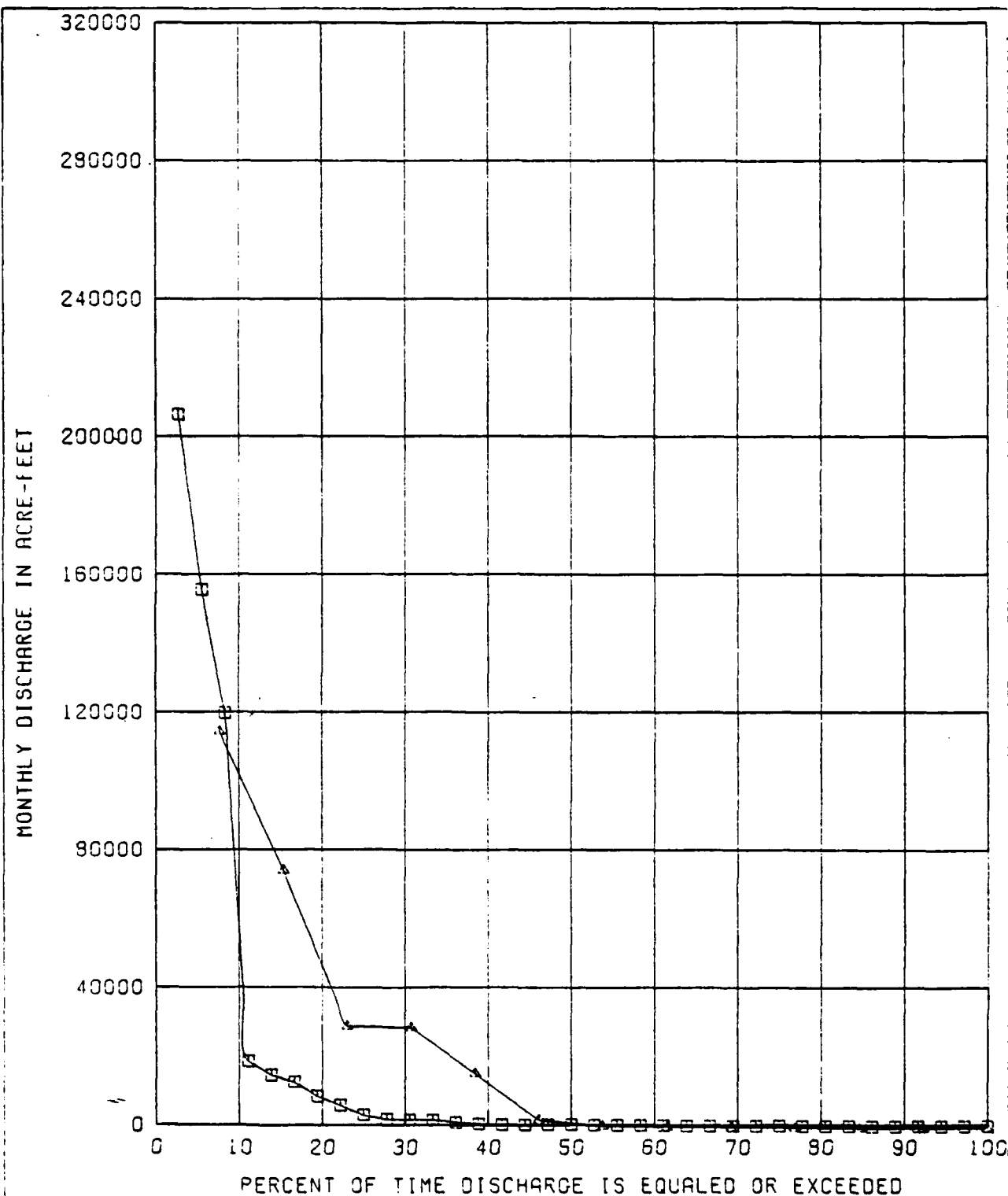
▲ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1955-1979)

BRAZOS RIVER BASIN, TEXAS
SOMERVILLE LAKE

FLOW DURATION CURVES AT DAM SITE
JUNE FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 18



LEGEND

□ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1959)

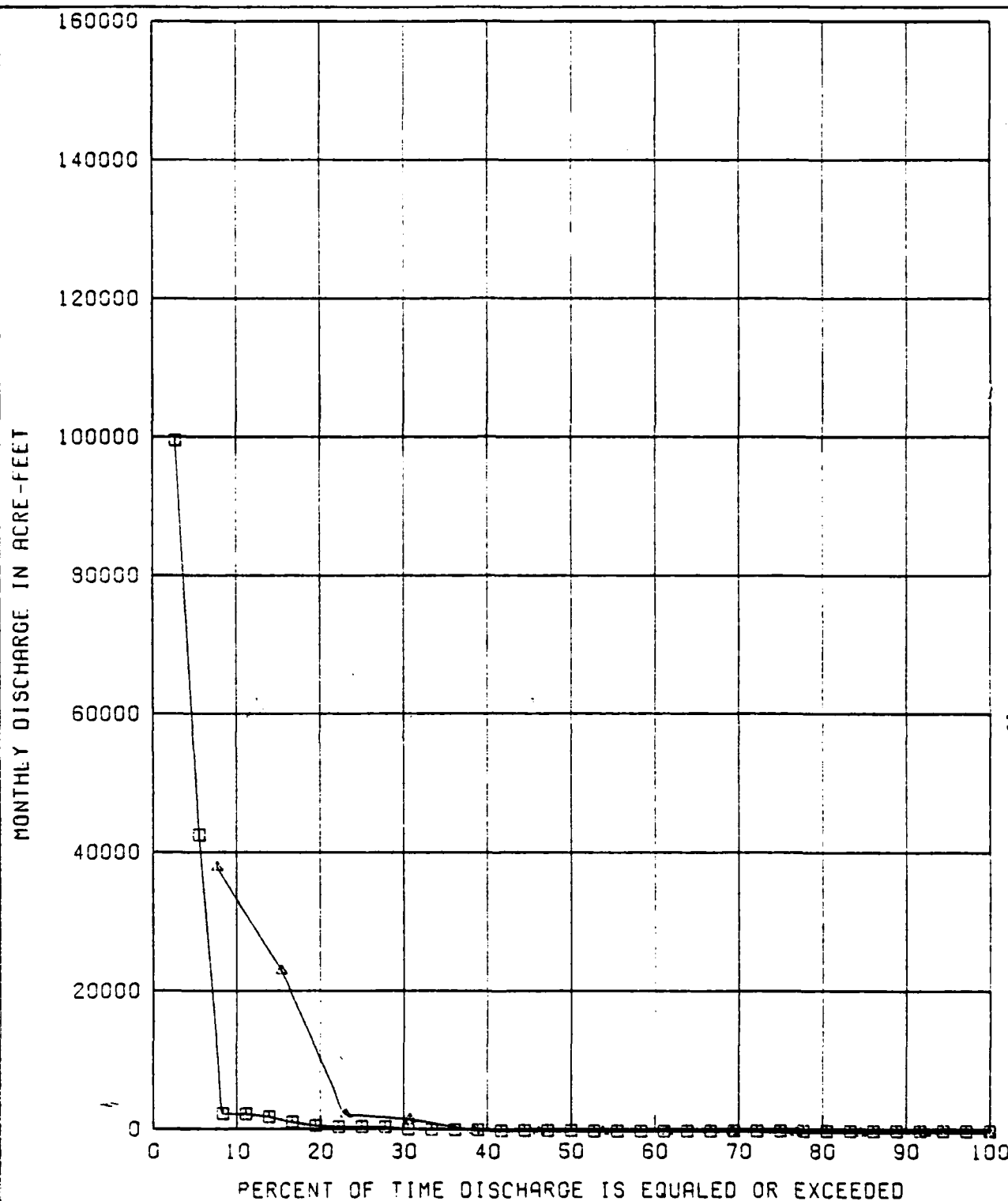
▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1956-1979)

BRAZOS RIVER BASIN, TEXAS
SOMERVILLE LAKE

FLOW DURATION CURVES AT DAM SITE
JULY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 19



LEGEND

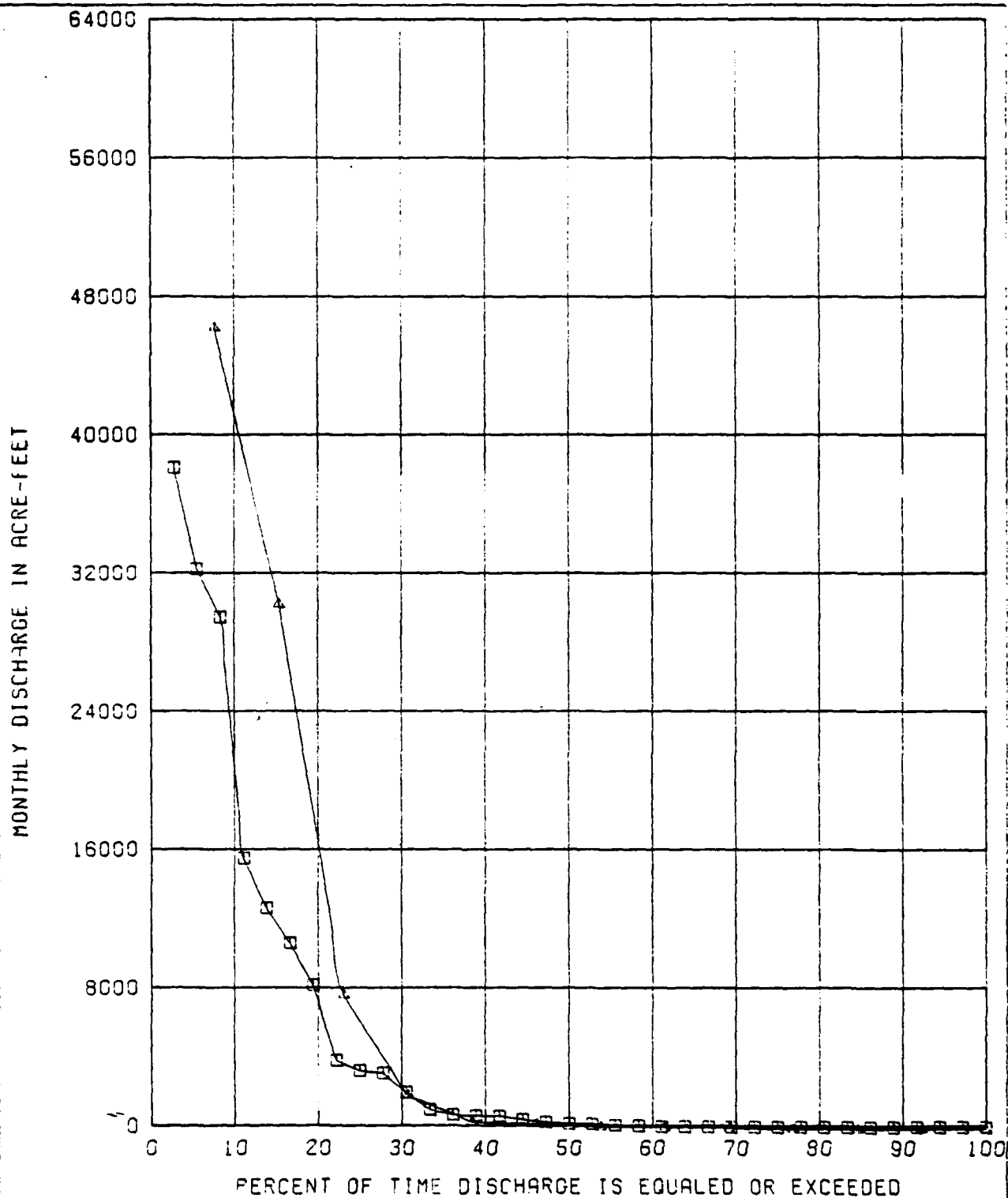
- — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1959)
- △ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1959-1979)

BRAZOS RIVER BASIN, TEXAS
SOMERVILLE LAKE

FLOW DURATION CURVES AT DAM SITE
AUGUST FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 20



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1959)

▲ — ▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1966-1979)

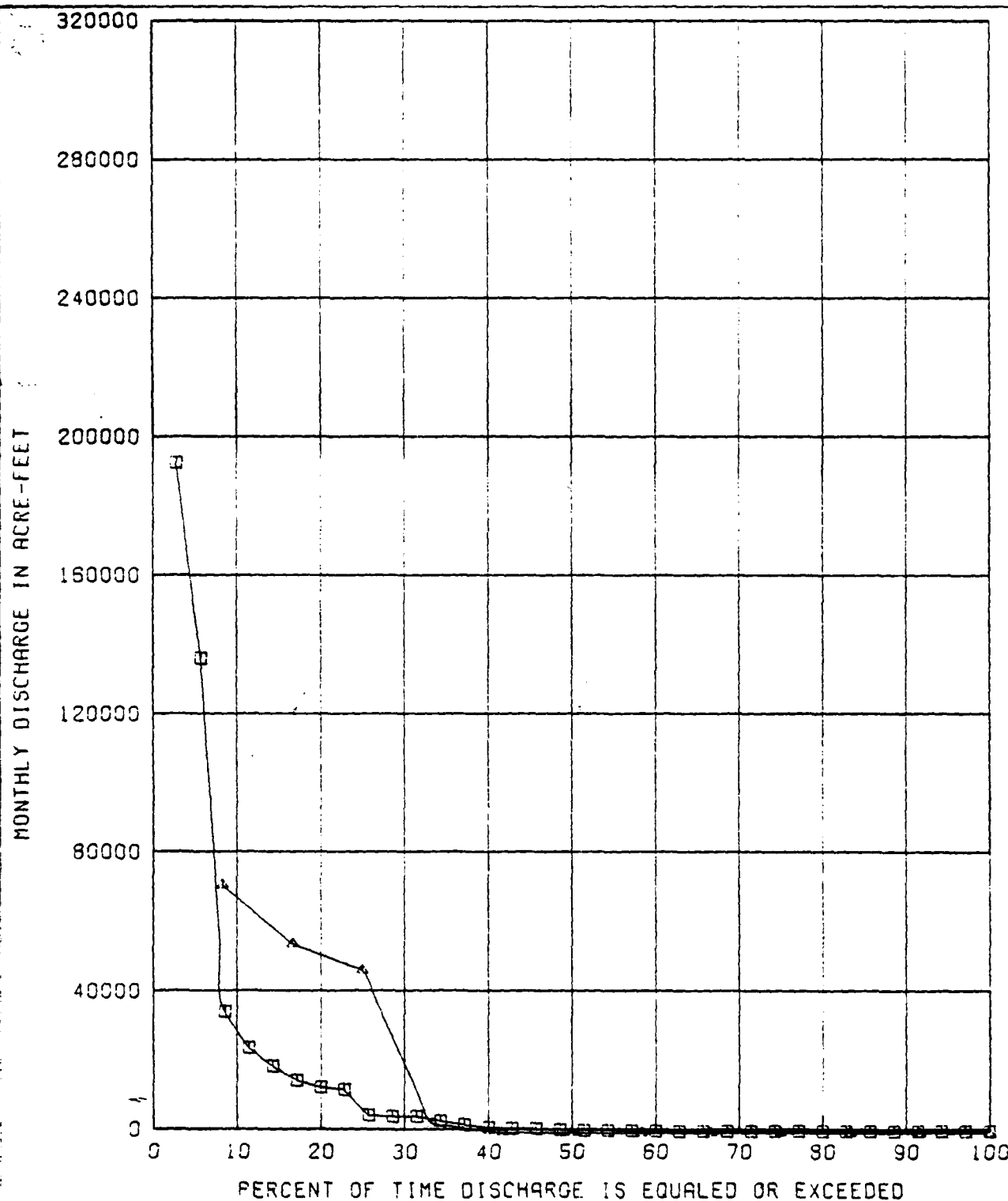
BRAZOS RIVER BASIN, TEXAS
SOMERVILLE LAKE

FLOW DURATION CURVES AT DAM SITE
SEPTEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 21

CORPS OF ENGINEERS



LEGEND

□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1959)

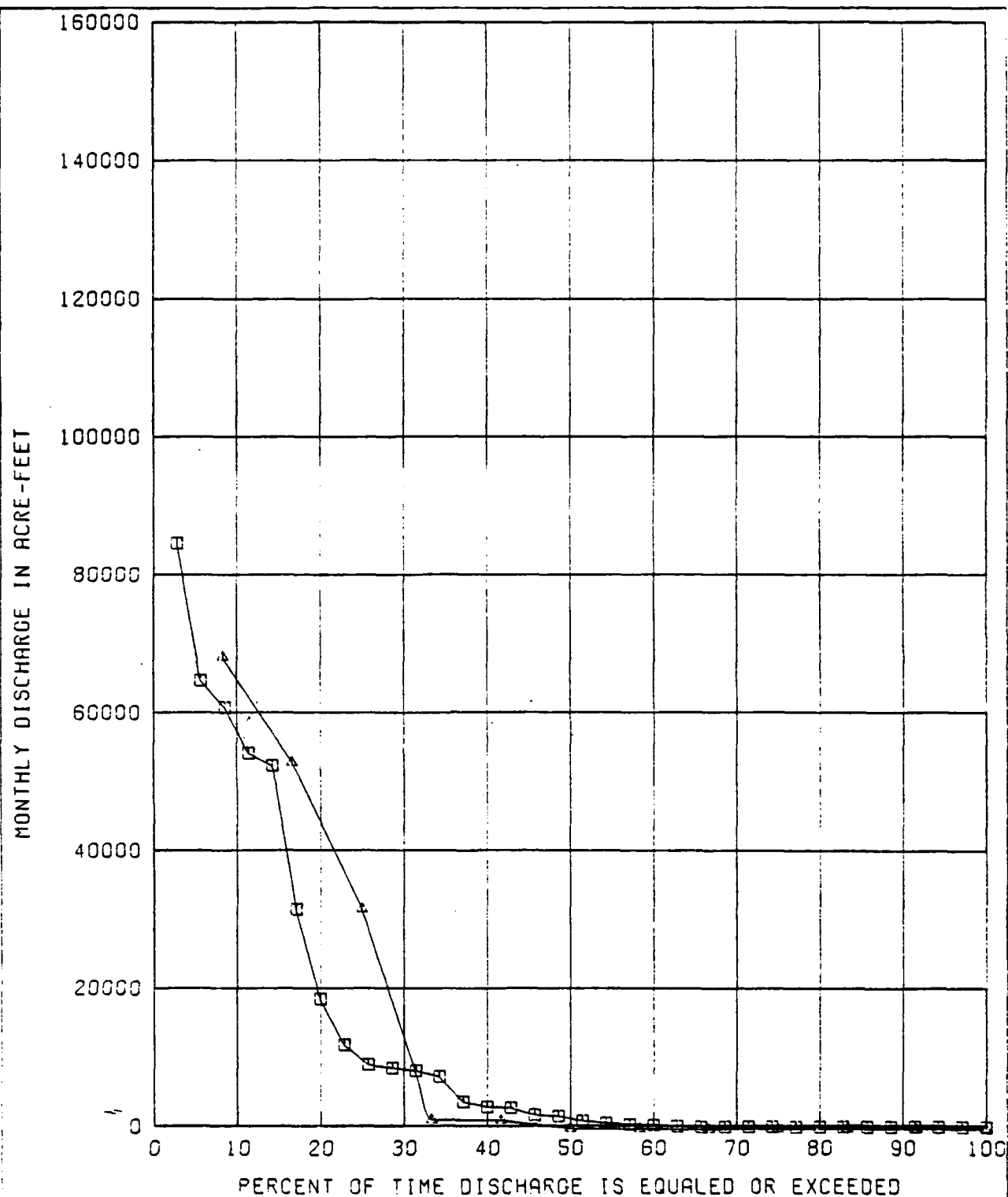
▲ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1956-1979)

BRAZOS RIVER BASIN, TEXAS
SOMERVILLE LAKE

FLOW DURATION CURVES AT DAM SITE
OCTOBER - OWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 22



LEGEND

□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1953)

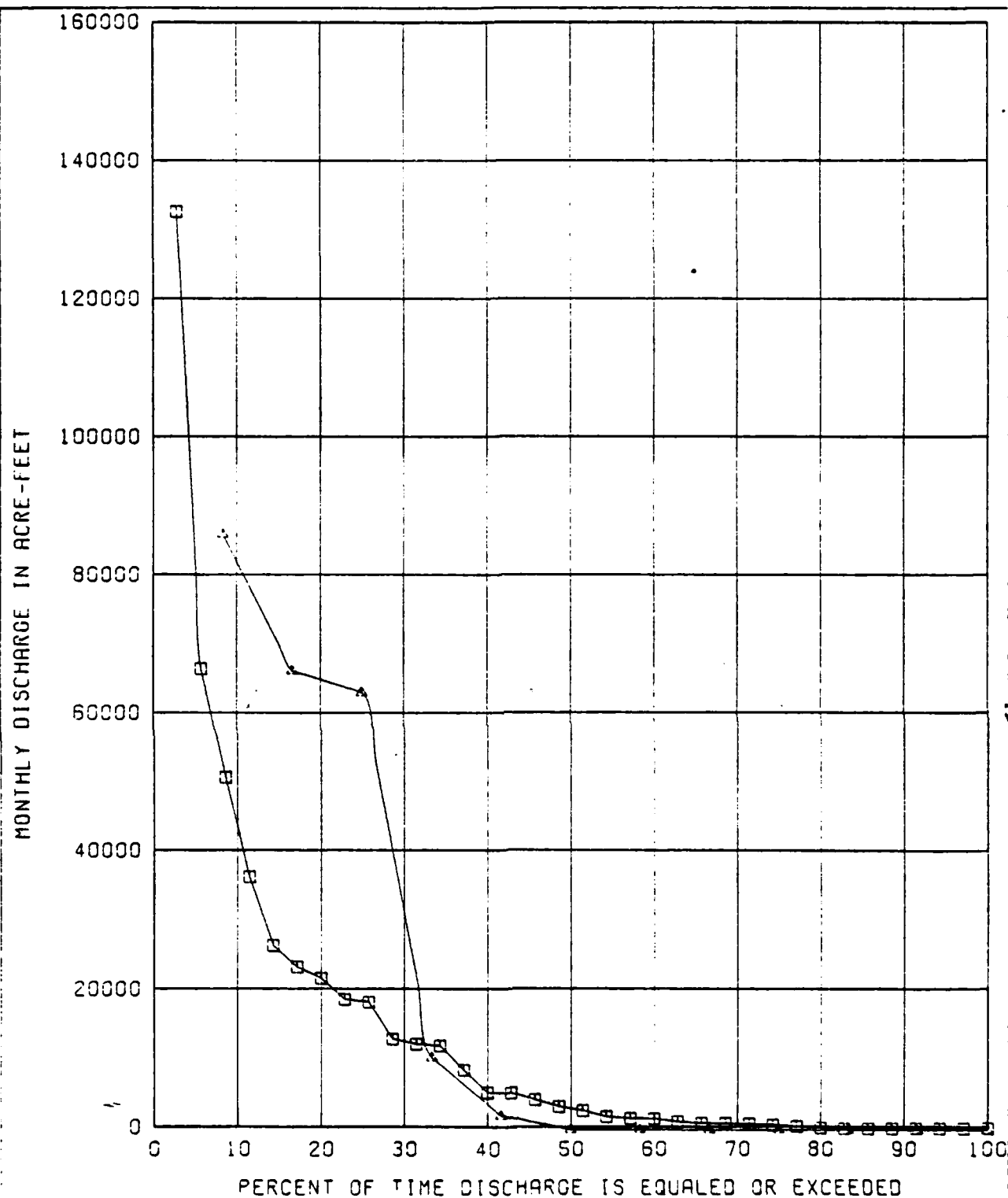
△ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1969-1979)

BRAZOS RIVER BASIN, TEXAS
SOMERVILL LAKE

FLOW DURATION CURVES AT DAM SITE
NOVEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 23



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1959)

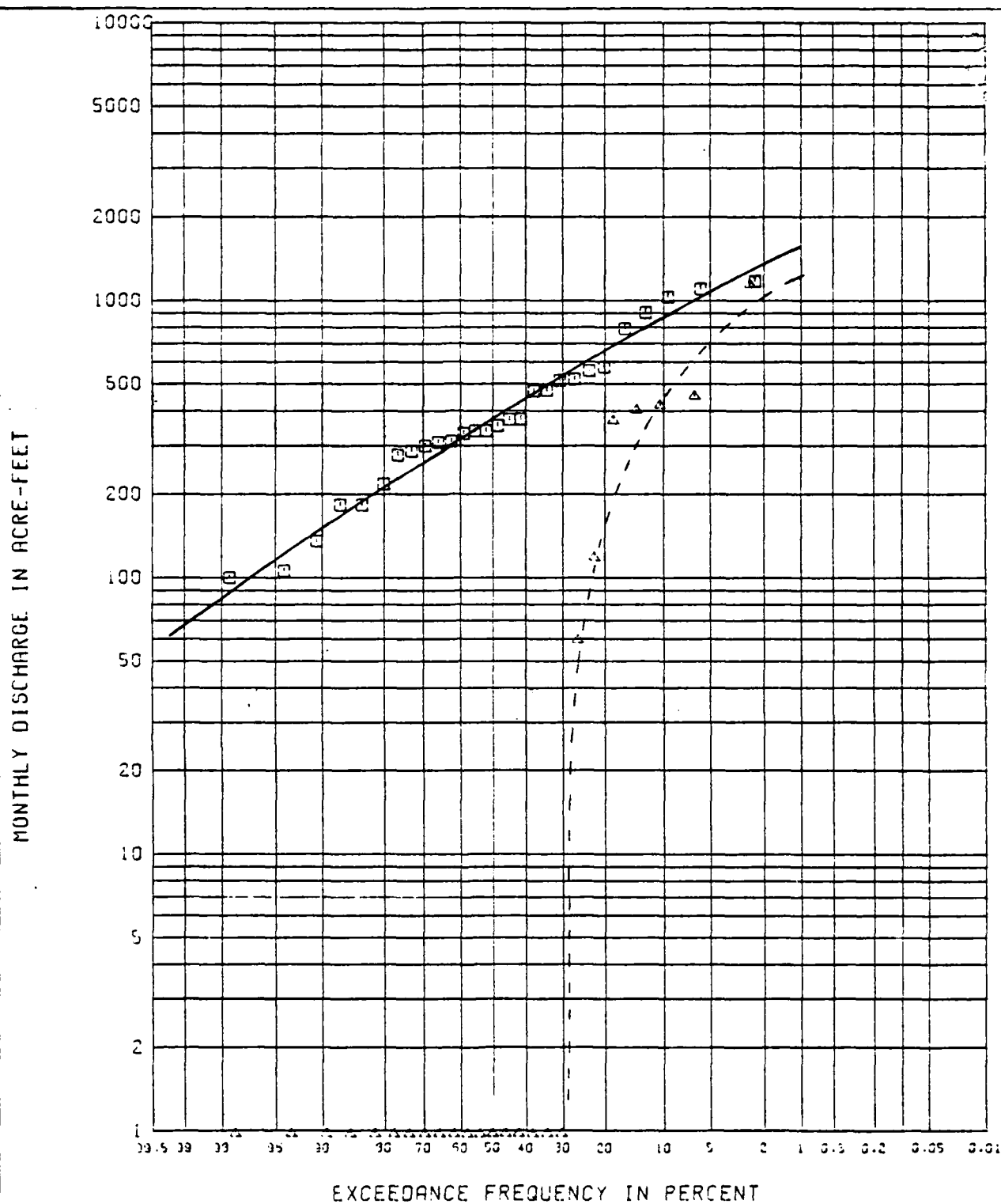
▲ — ▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1955-1979)

BRAZOS RIVER BASIN, TEXAS
SOMERVILLE LAKE

FLOW DURATION CURVES AT DAM SITE
DECEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 24



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1952)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

O GRACO RIVER BASIN, TEXAS

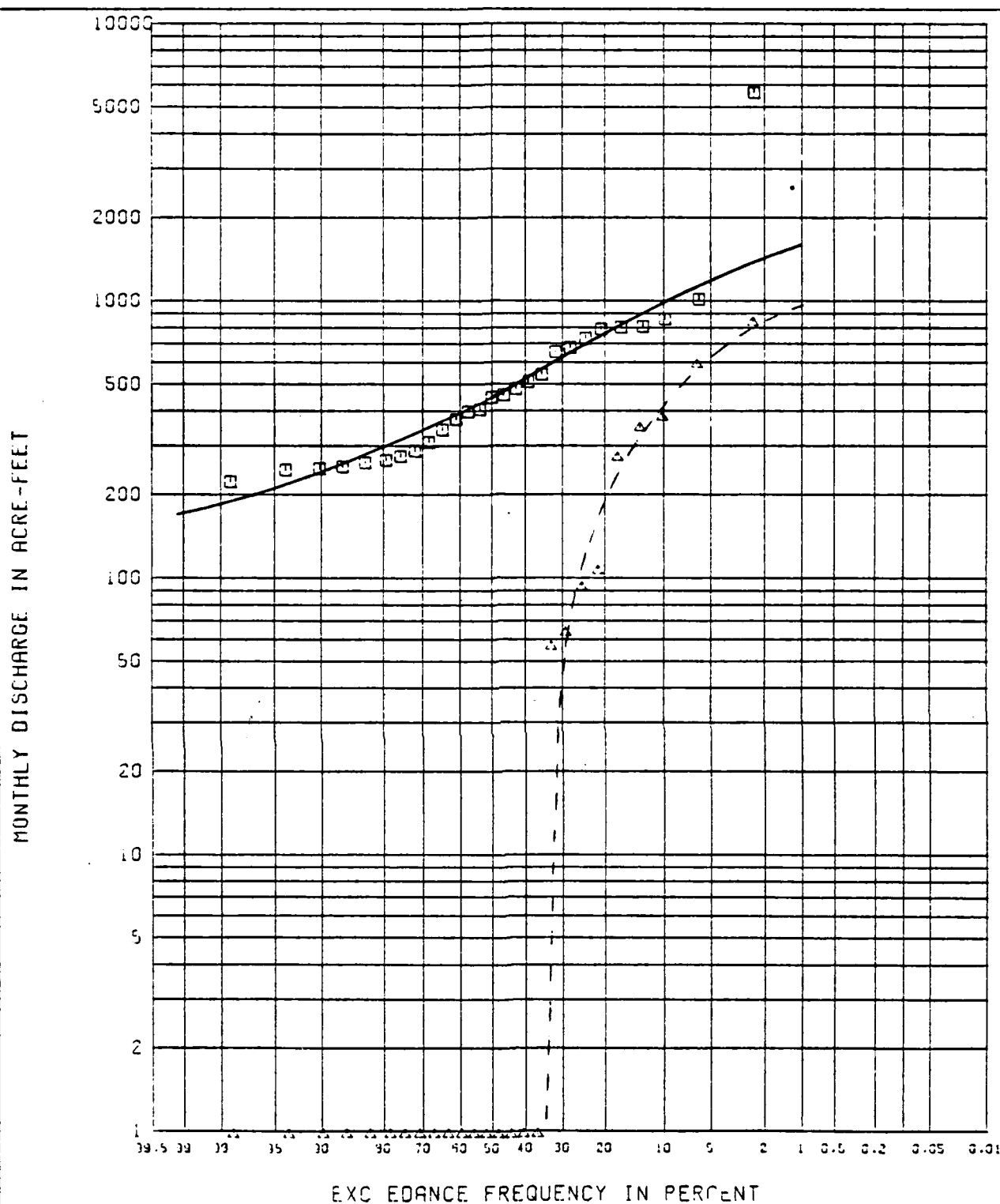
O.C. FISHER LAKE

DISCHARGE-FREQUENCY RELATIONS
AT AM SITE

JANUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT - DECEMBER 1980

PLATE 1



LEGEND

- — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 192-1952)
- △ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

COLORADO RIVER BASIN, TEXAS

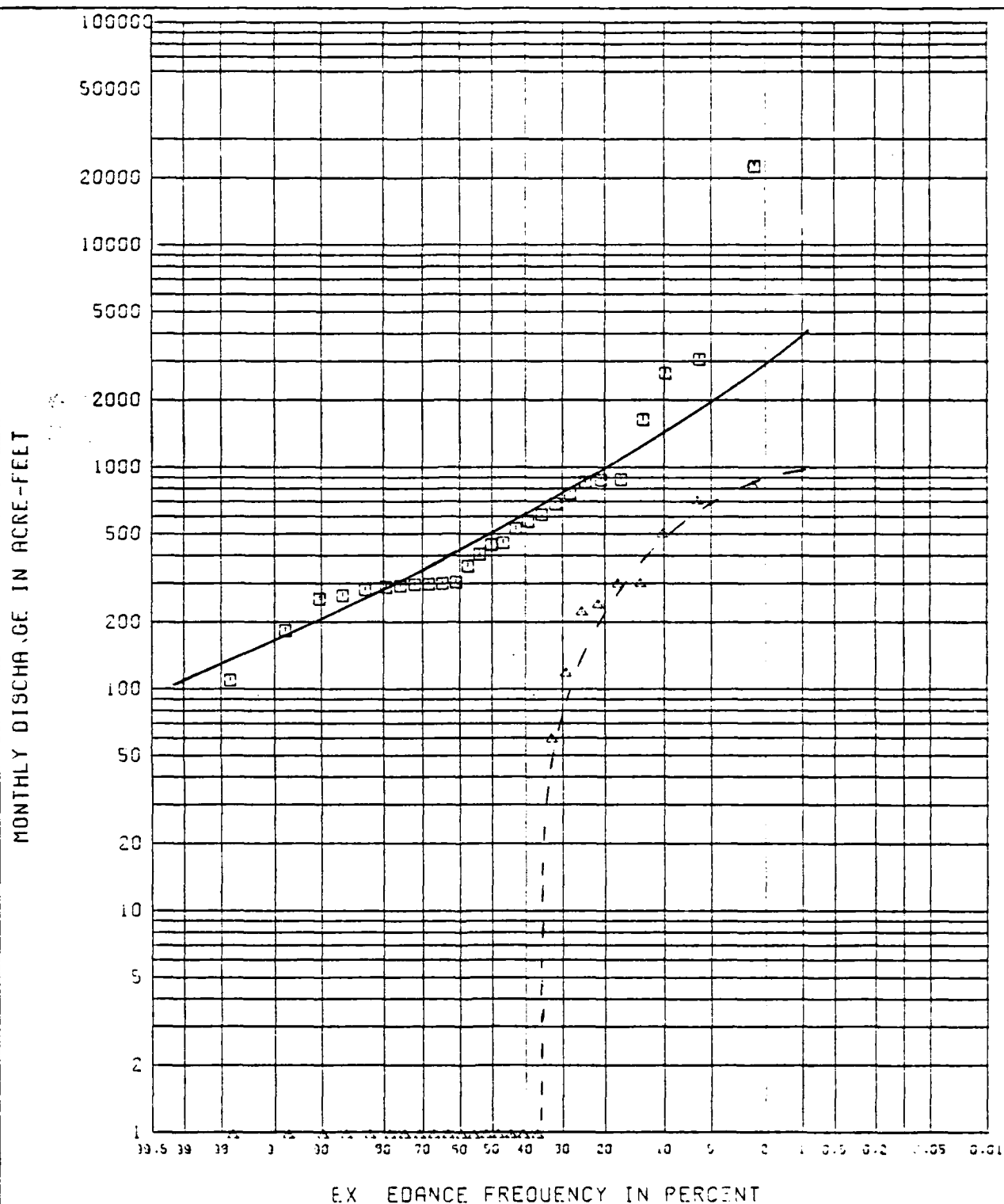
G.C. SHER LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

FEBRUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT 3, DECEMBER 1990

PLATE 2



LE END

—■— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1952)

-▲- POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

COLORADO RIVER BASIN, TEXAS

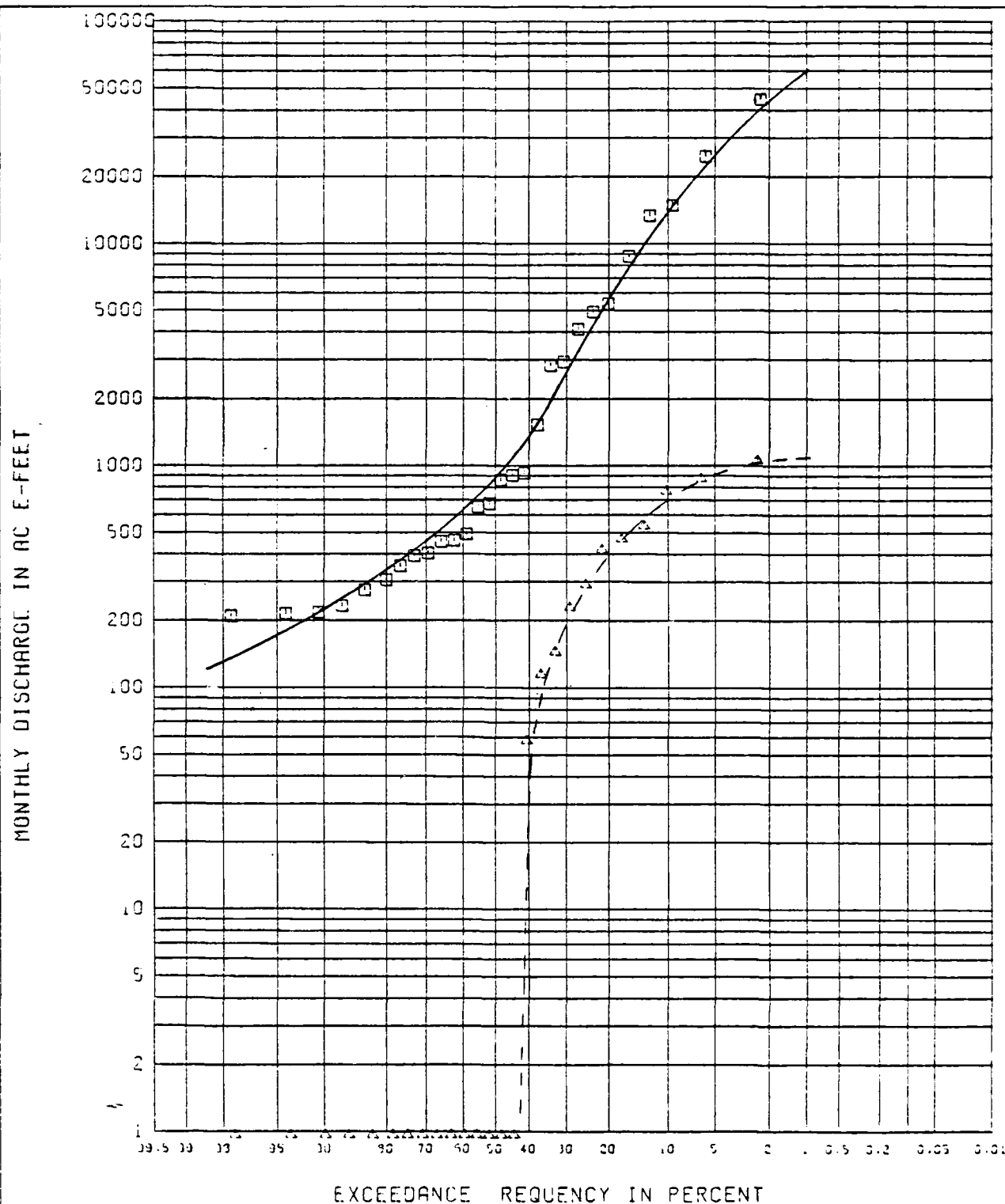
O.C. LITCHER LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

AR H FLO S

U. S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTRUMENTAL PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 3



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1952)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

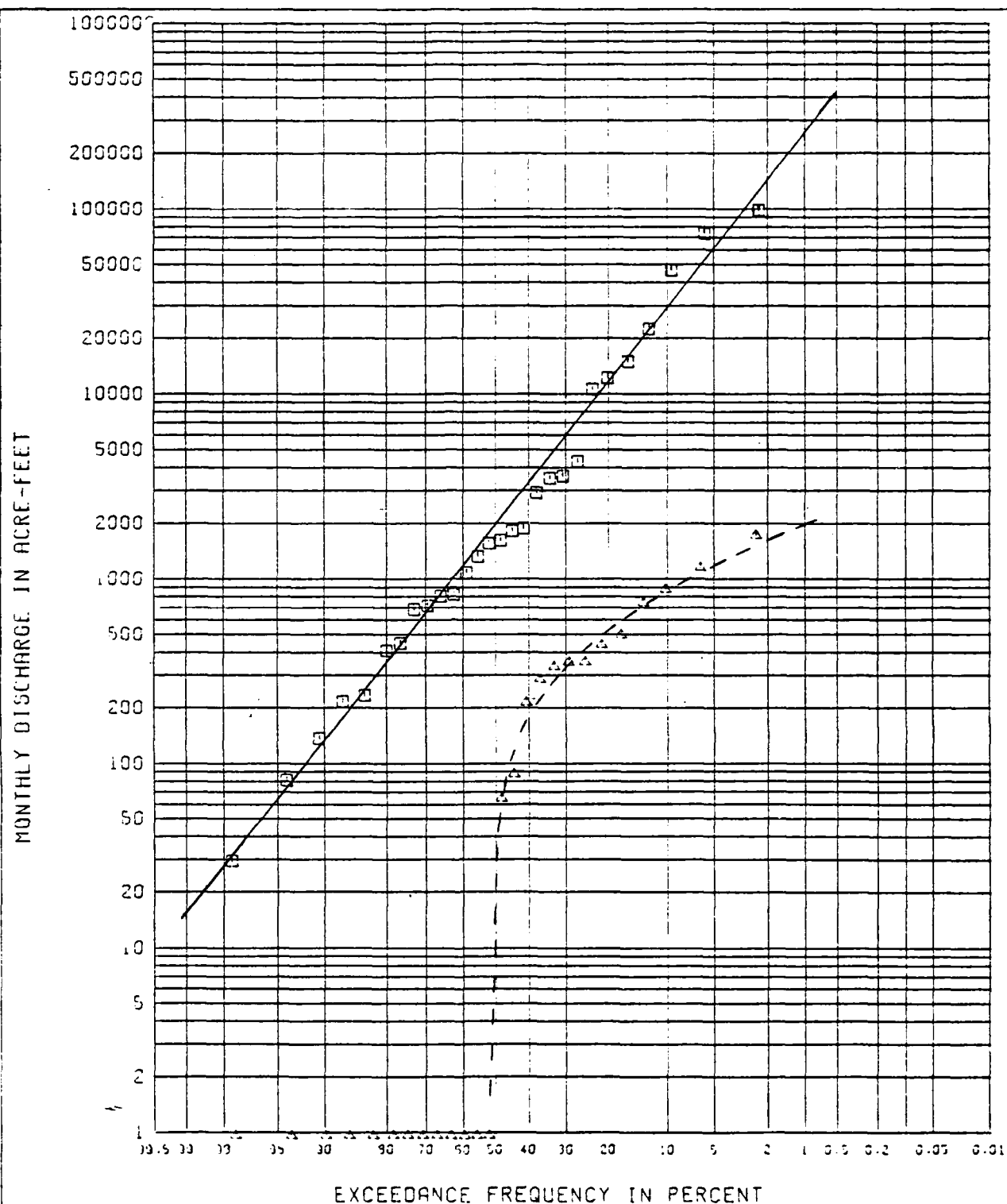
COLORADO RIVER BASIN, TEXAS

G.O. FISHER LAKE

DISCHARGE - FREQUENCY RELATIONS
AT DAM SITE
APRIL FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEM AND NEEDS
EVALUATION REPORT 9 DECEMBER 1990

PLATE 4



LEGEND

- — □ PRE-IMPOUNDMENT CONDITIONS
 (PERIOD OF RECORD 1922-1951)
- ▲ — ▲ POST-IMPOUNDMENT CONDITIONS
 (PERIOD OF RECORD 1952-1979)

COLORADO RIVER BASIN, TEXAS

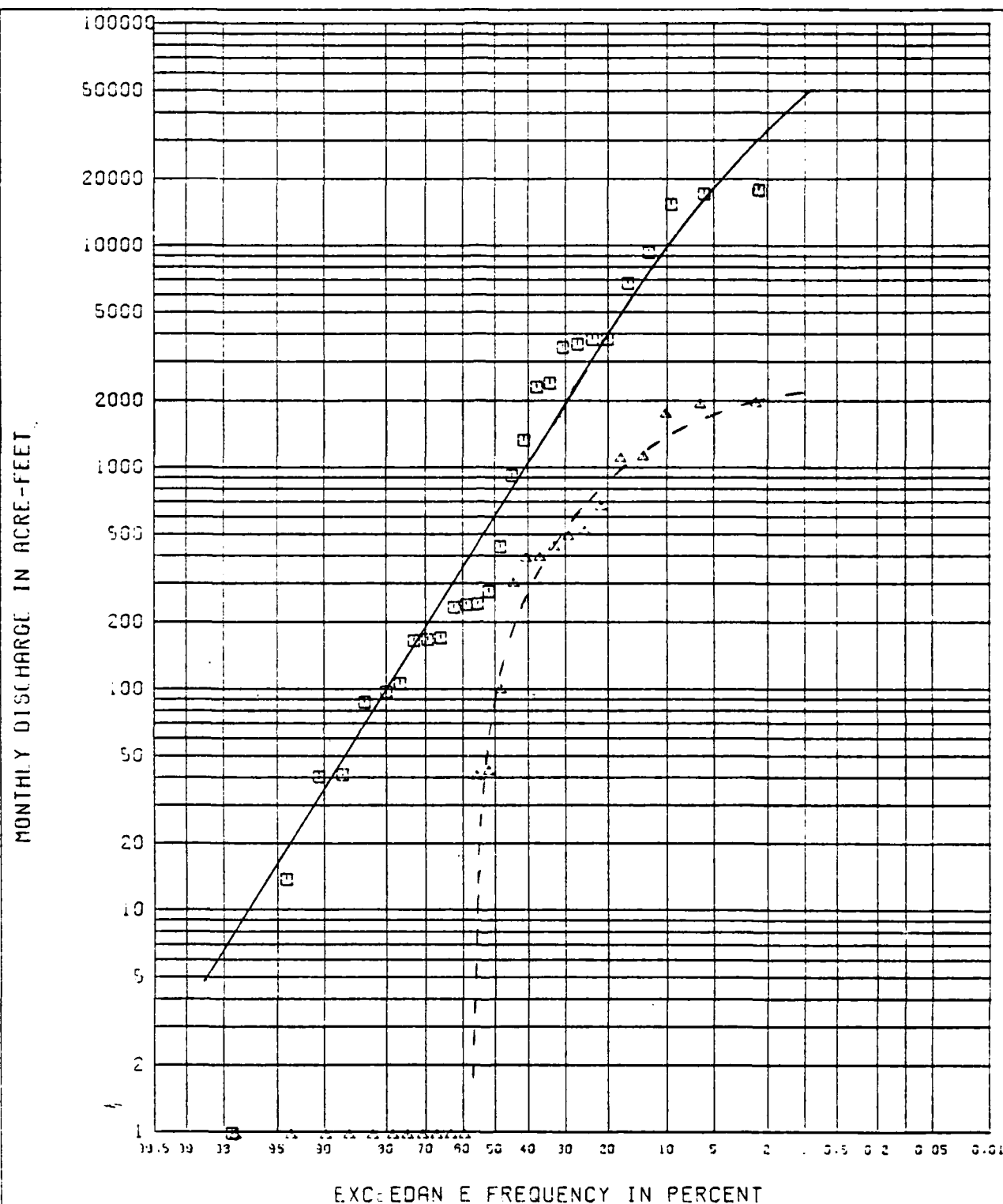
O.C. ISHER LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

MAY FLOWS

U. S. ARMY ENGINEER DISTRICT, FORT WORTH
 TO ACCOMPANY INSTREAM LOW PROBLEMS NO NEEDS
 EVALUATION REPORT 3 EC 6ER 139C

PLATE 5



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1921-1952)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

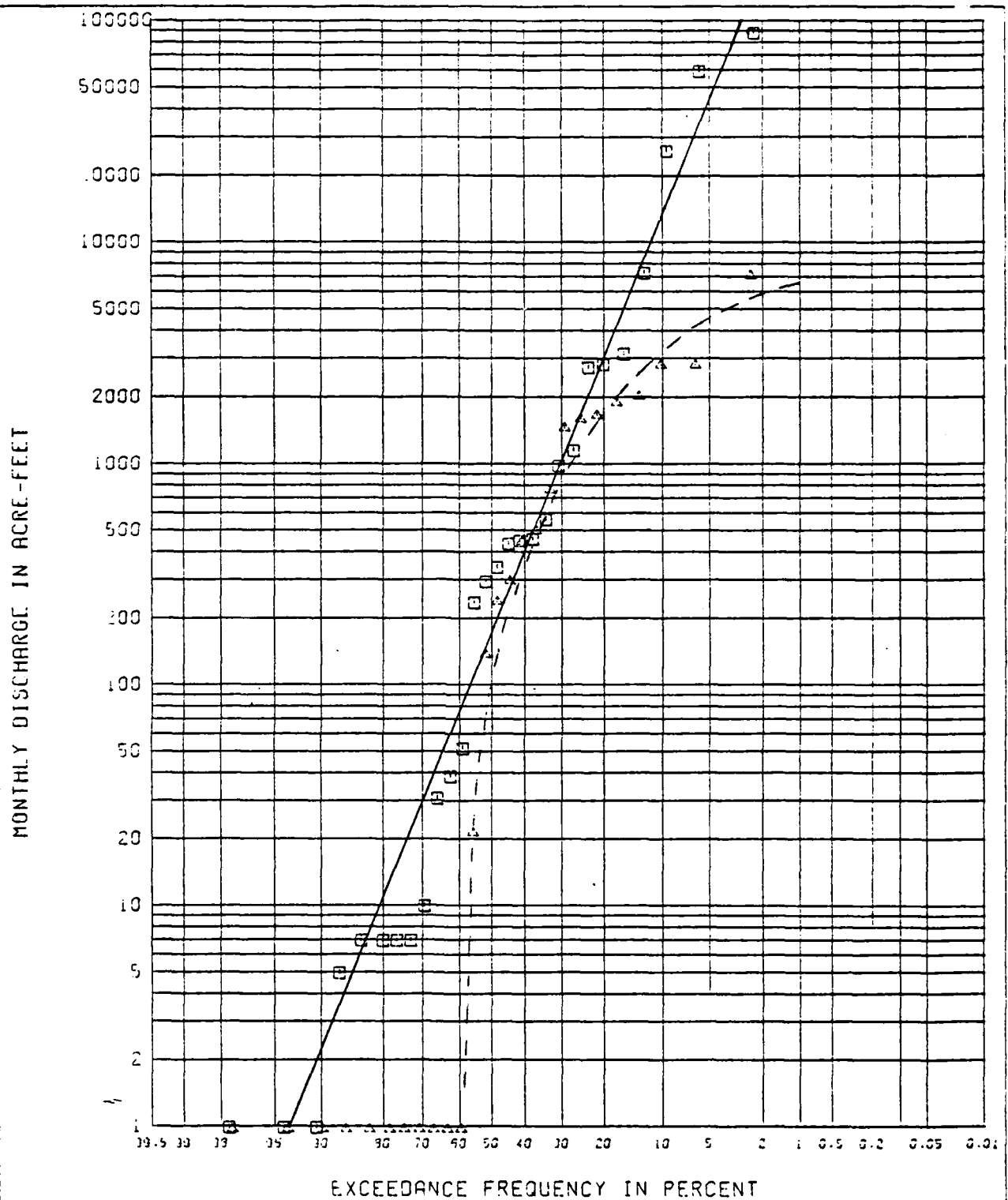
COLORADO RIVER BASIN, TEXAS

O.C. FISHER LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
JUNE FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 6



LEGEND

—■— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1-52)

-▲- POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

COLORADO RIVER BASIN, TEXAS

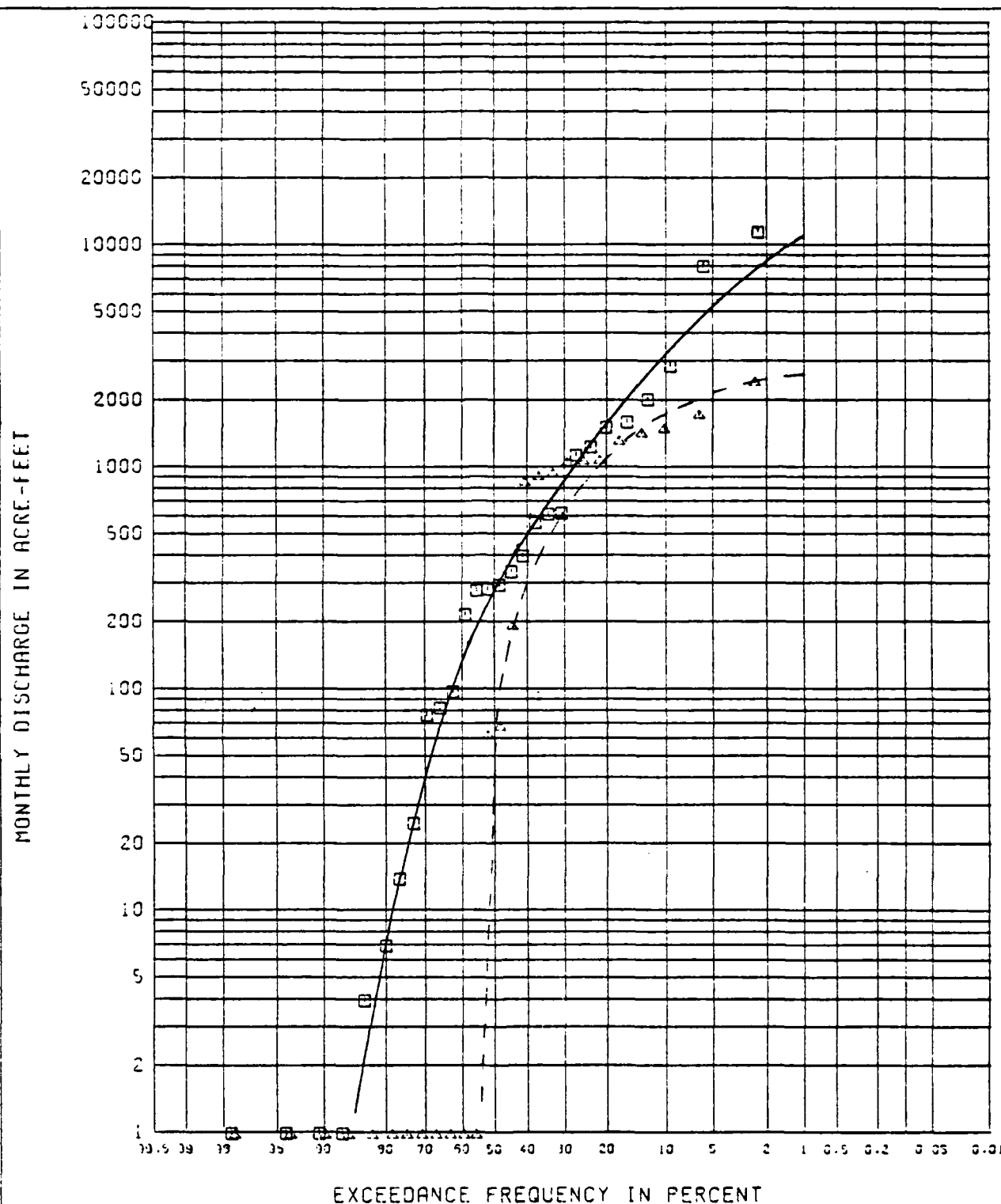
O. FISHER LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

JULY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLO PROBLEM AND NEEDS
EVALUATION REPORT OF DECEMBER 1-90

PLATE 7



LEGEND

□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1952)

△ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

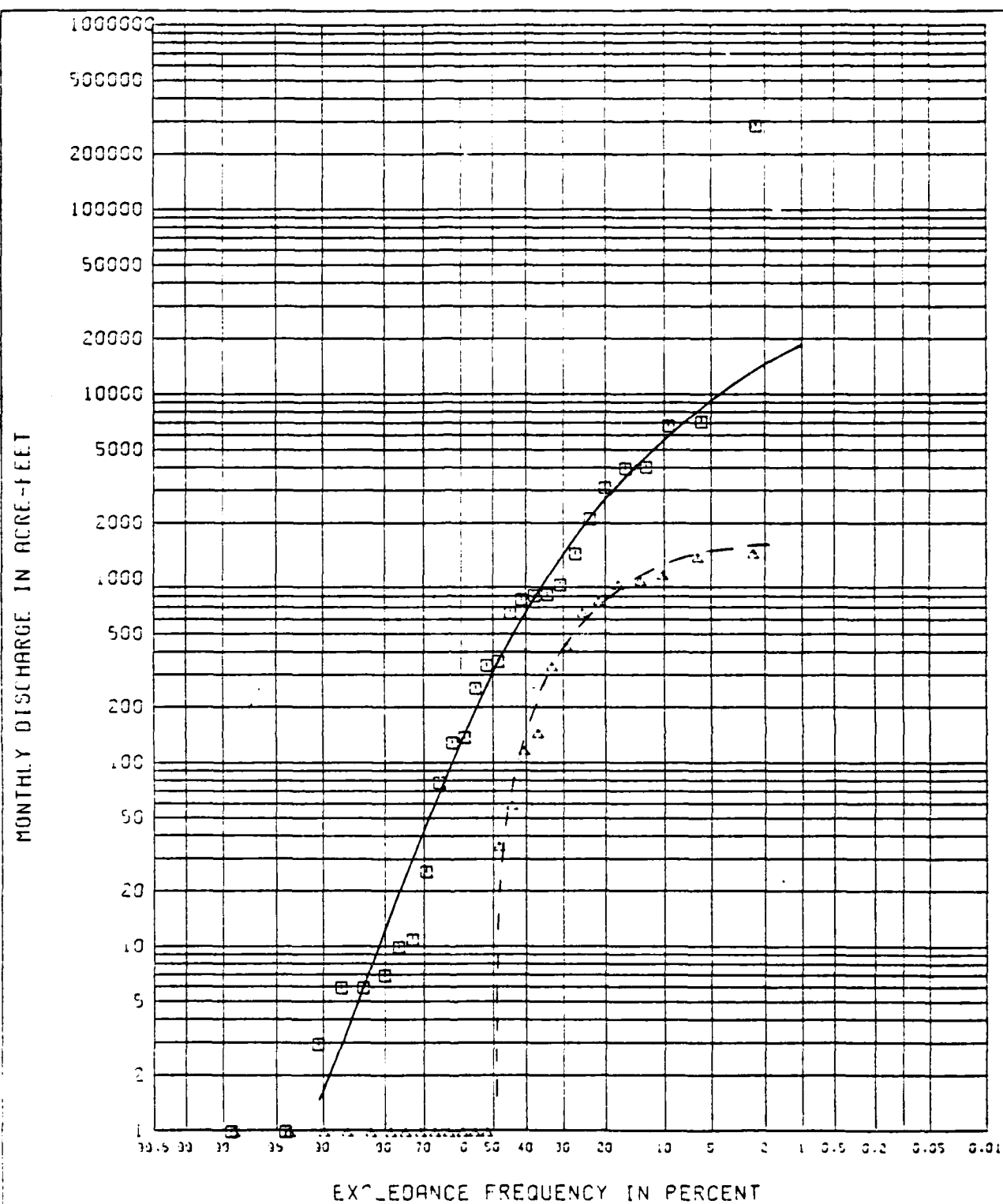
COLORADO RIVER BASIN, TEXAS

J.C. FISHER LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
AUGUST FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1, 1980

PLATE 8



LEGEND

—■— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 192-1952)

- - -△- - POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 195-1991)

OLRADO RIVER BASIN, TEXAS

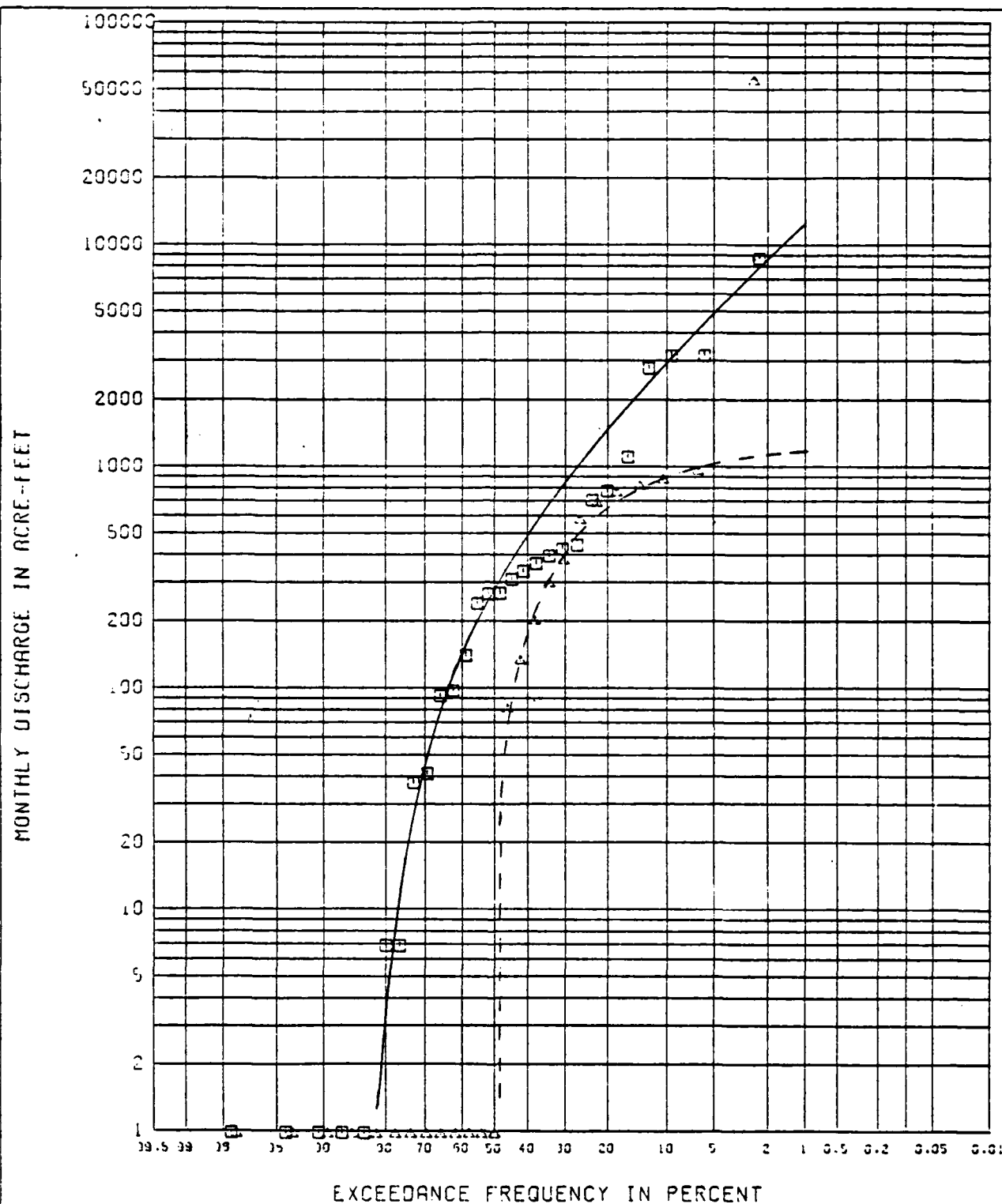
C.C. FISHER LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

SEPTEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

LATE 9



LEGEND

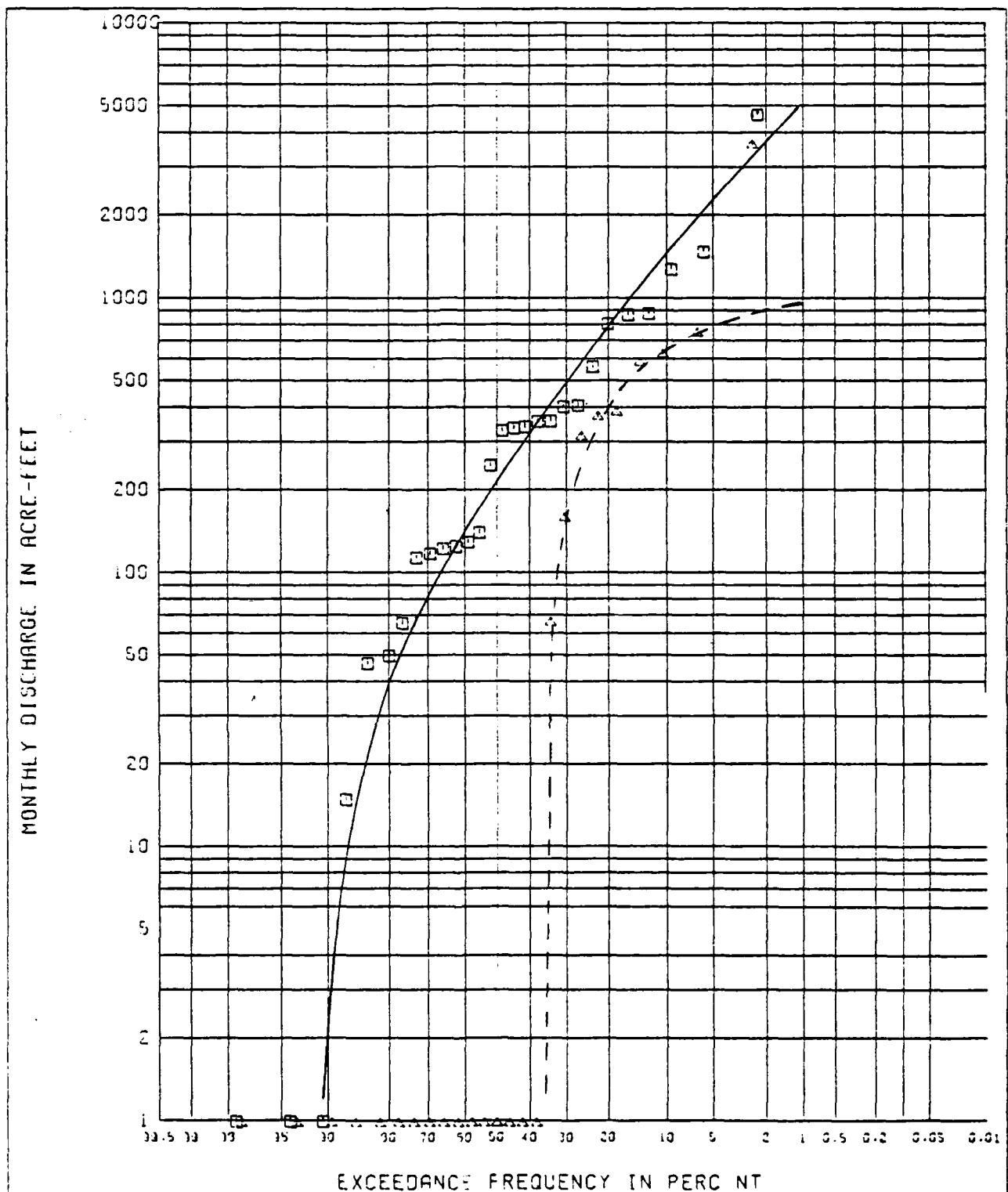
—■— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1952)

-△- POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 195-1979)

COLORADO RIVER BASIN, TEXAS
O.C. FISHER LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
OCTOBER LOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM LOW PROBLEMS AND NEEDS
EVALUATION REPORT OF OCTOBER 1980

PLATE 10



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1932-1952)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

COLORADO RIVER BASIN, TEXAS

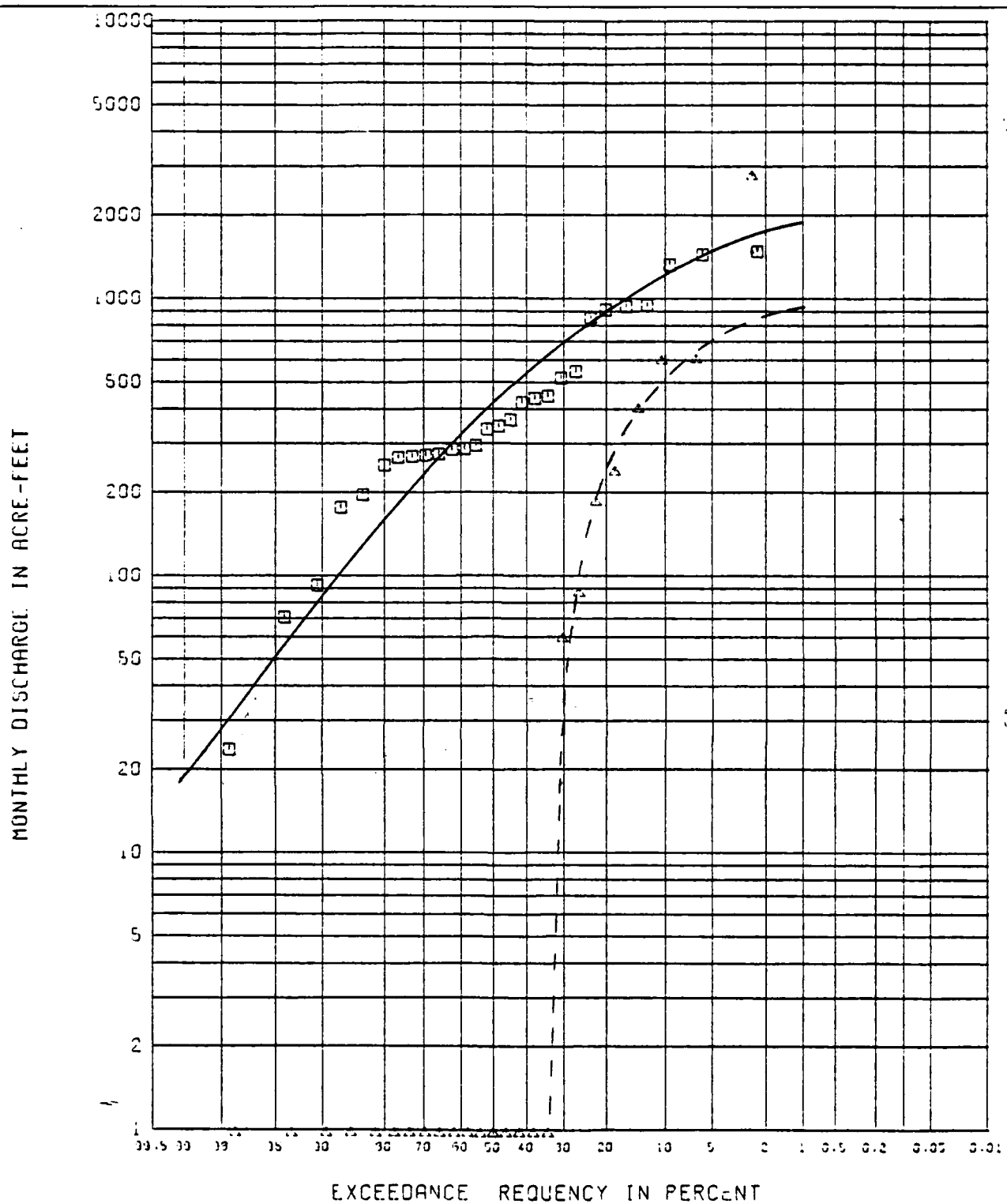
O.C. FISHER LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

NOVEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO A COMPANY INSTREAM FLO. PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

- PLATE II



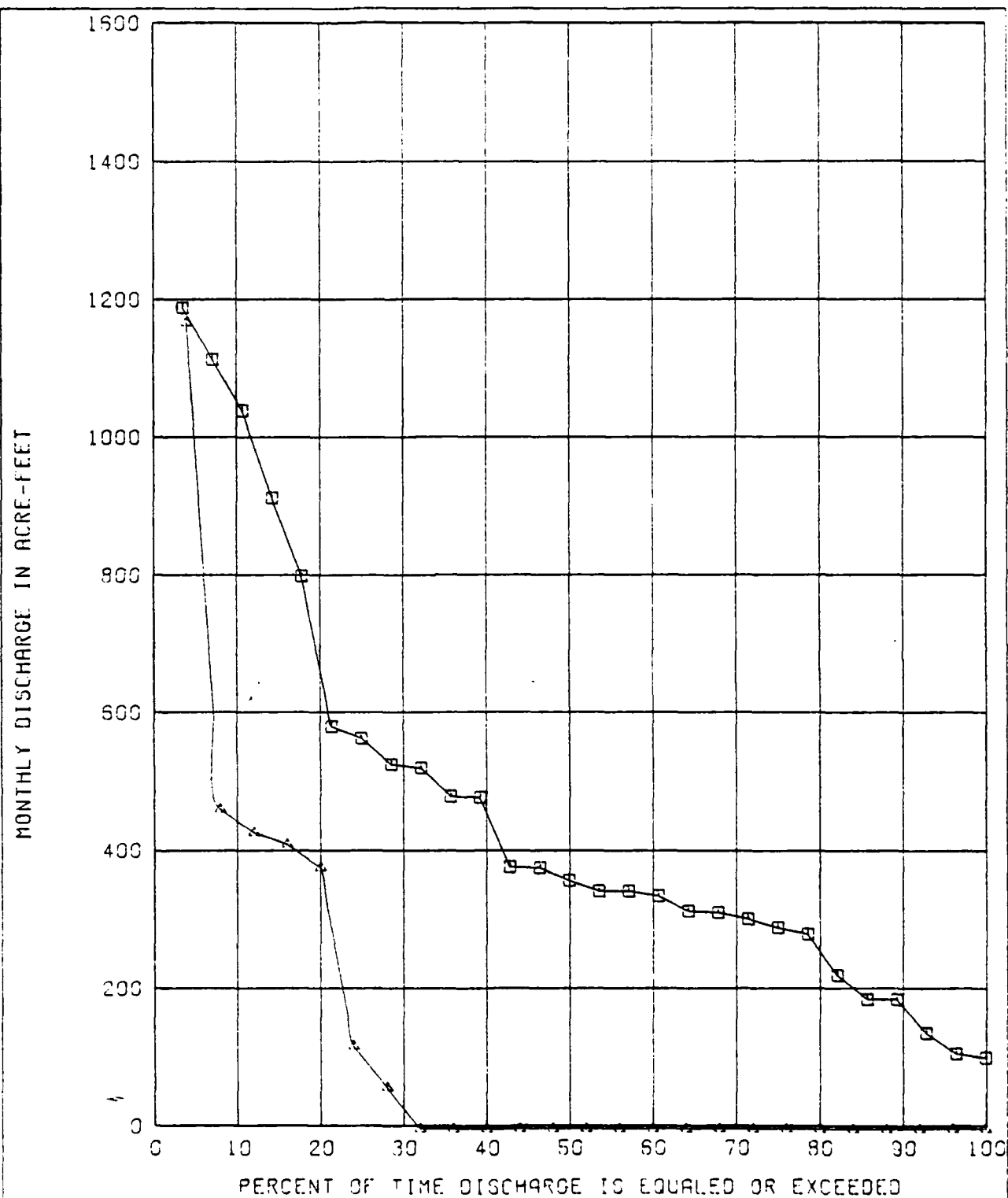
LEGEND

- — □ PRE-IMPOUNDMENT CONDITIONS
 (PERIOD OF RECORD 1924-1952)
- △ — △ POST-IMPOUNDMENT CONDITIONS
 (PERIOD OF RECORD 1954-1979)

COLORADO RIVER BASIN, TEXAS
 O.C. FISHER LAKE
 DISCHARGE-FREQUENCY RELATIONS
 AT DAM SITE
 DECEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
 TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
 EVALUATION REPORT OF DECEMBER 1990

PLATE 12



LEGEND

□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1952)

▲ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

COLORADO RIVER BASIN, TEXAS

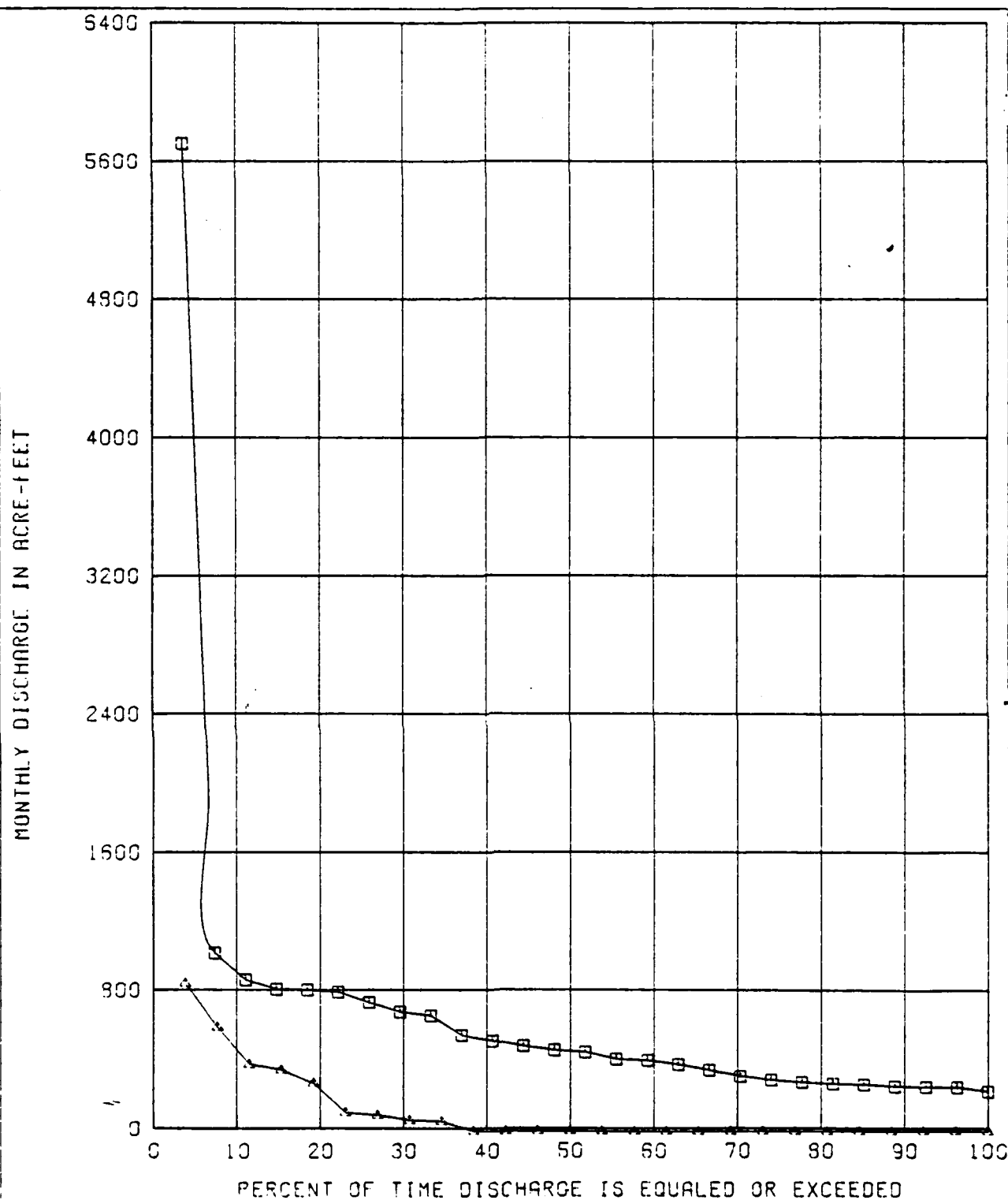
O.C. FISHER LAKE

FLOW DURATION CURVES AT DAM SITE

JANUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 13



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1952)

▲ — ▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

COLORADO RIVER BASIN, TEXAS

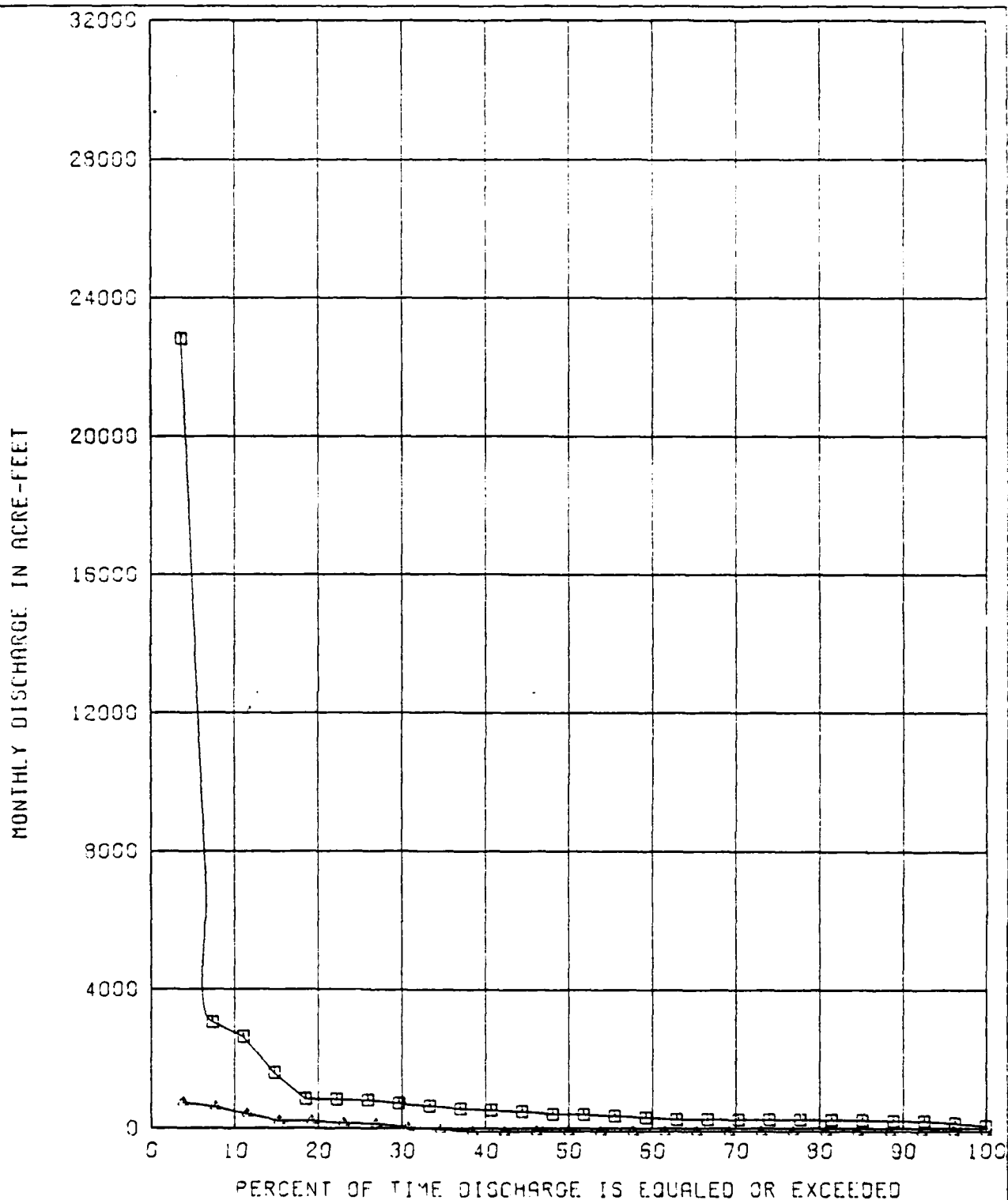
O.C. FISHER LAKE

FLOW DURATION CURVES AT DAM SITE

FEBRUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1950

PLATE 14



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1952)

▲ — ▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

COLORADO RIVER BASIN, TEXAS

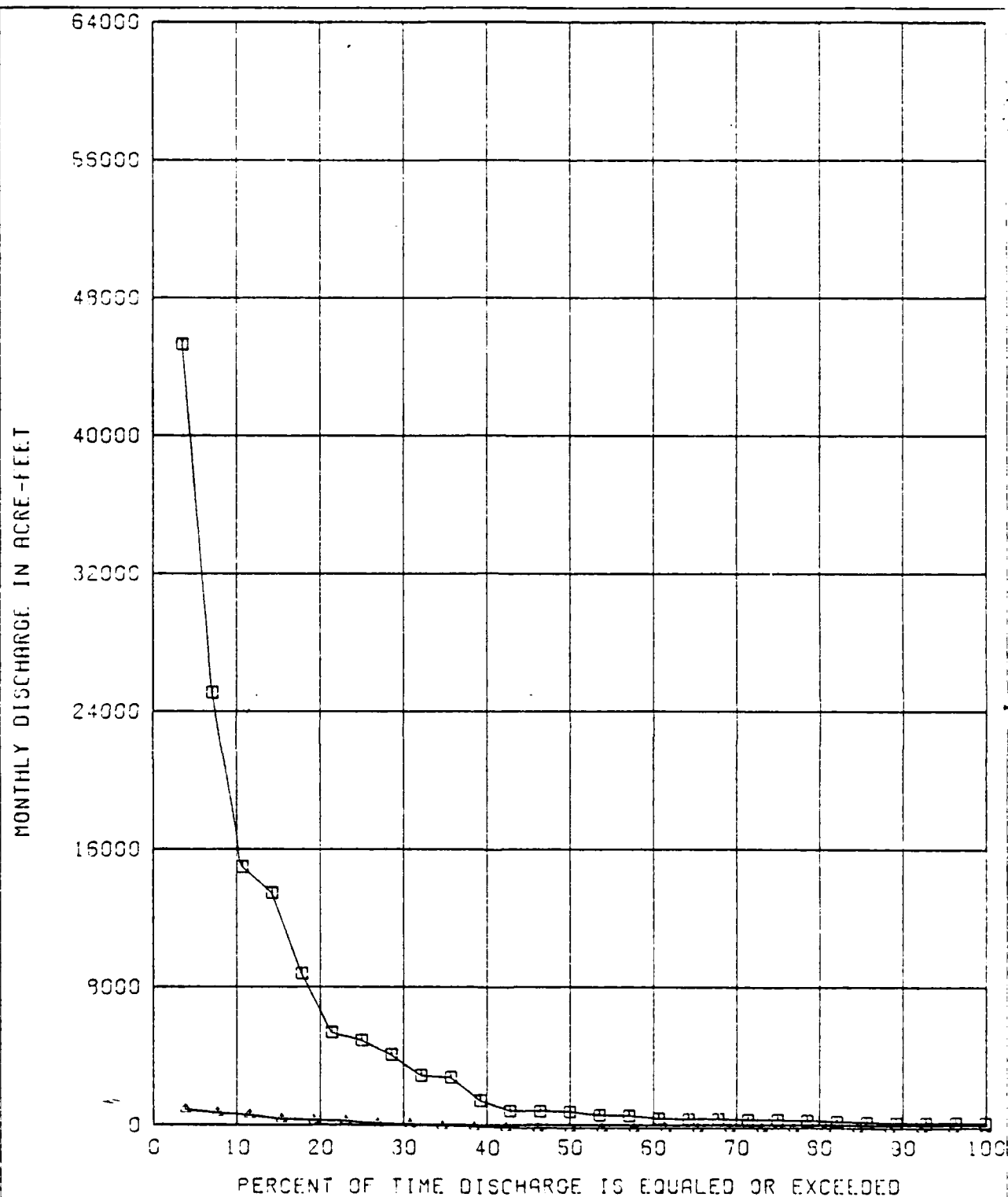
O.C. FISHER LAKE

FLOW DURATION CURVES AT DAM SITE

MARCH FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 15



LEGEND

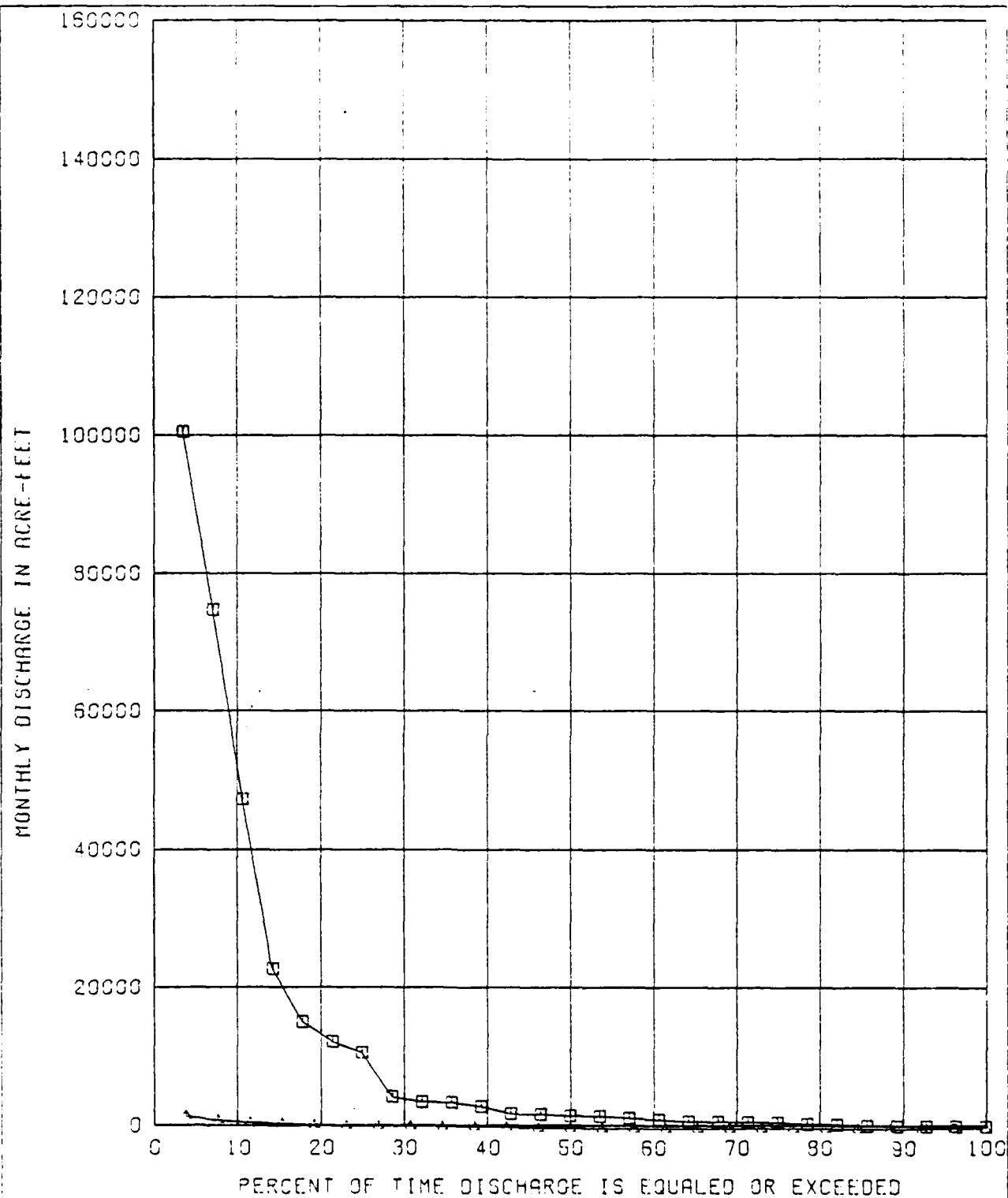
- PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1952)
- ▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

COLORADO RIVER BASIN, TEXAS
O.C. FISHER LAKE

FLOW DURATION CURVES AT DAM SITE
APRIL FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 16



LEGEND

□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1952)

▲ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

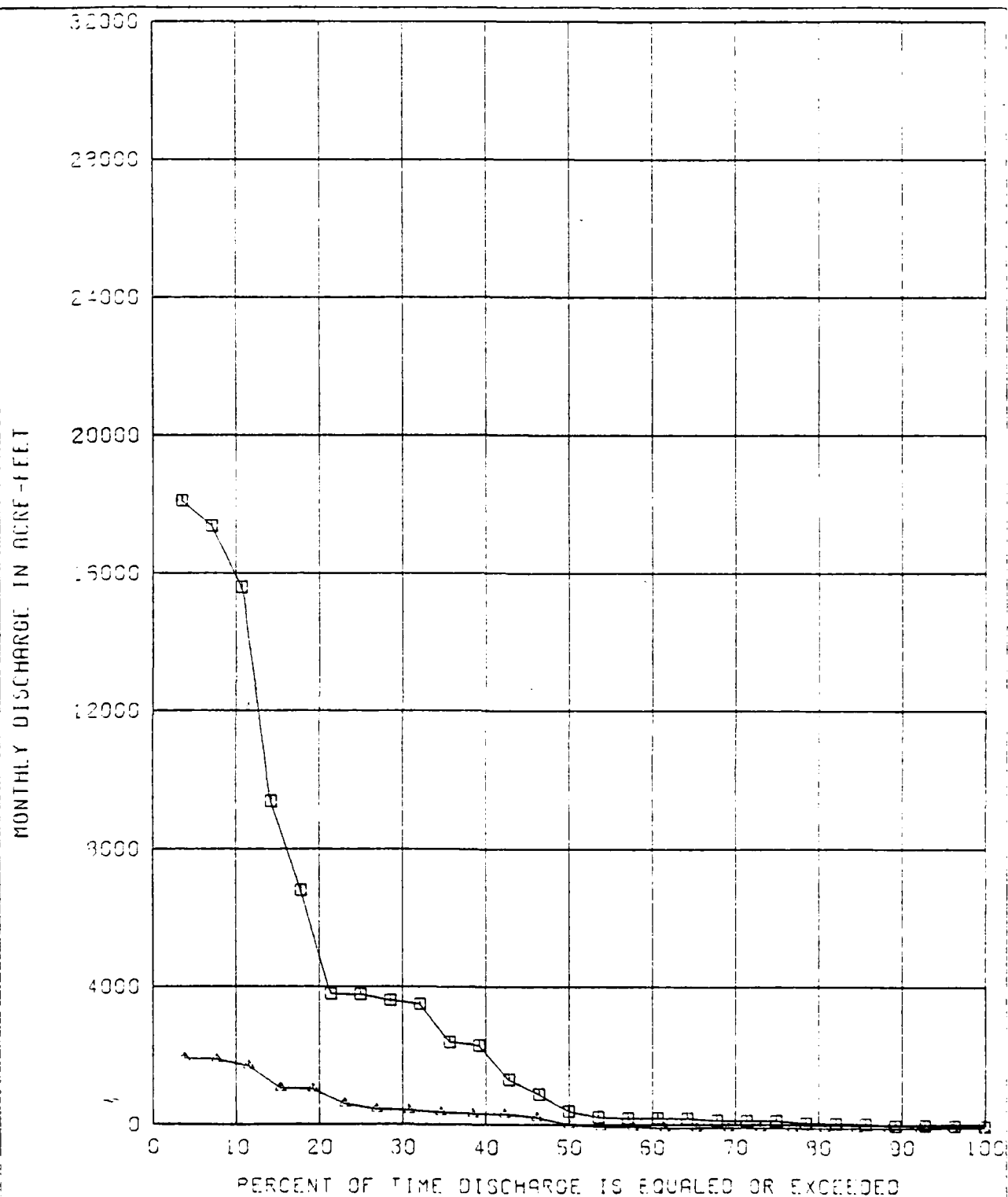
COLORADO RIVER BASIN, TEXAS

J.C. FISHER LAKE

FLOW DURATION CURVES AT DAM SITE
MAY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 17



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1951)

▲ — ▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

COLORADO RIVER BASIN, TEXAS

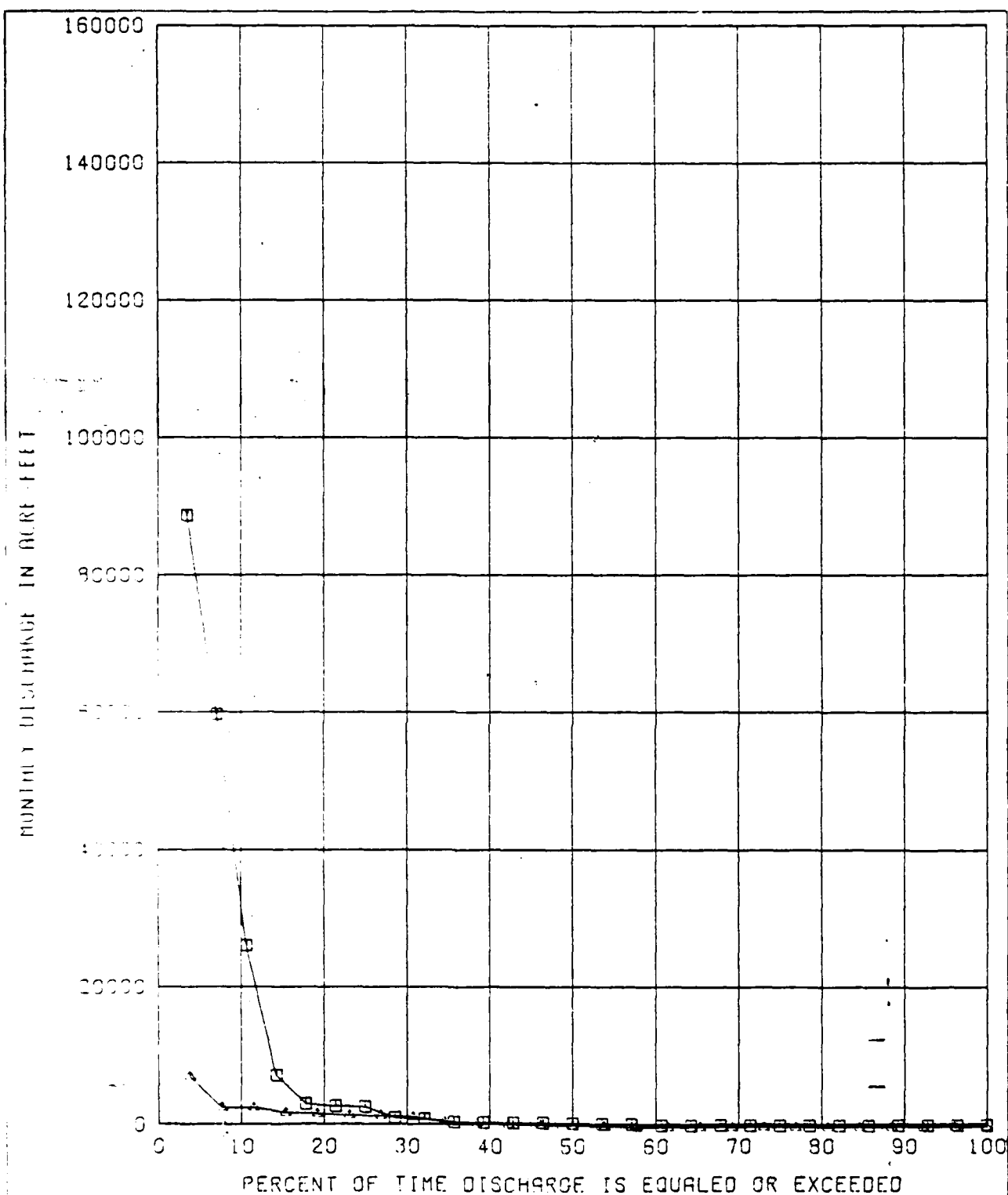
O.C. FISHER LAKE

FLOW DURATION CURVES AT DAM SITE

JUNE FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 18



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1952)

▲ — ▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

COLORADO RIVER BASIN, TEXAS

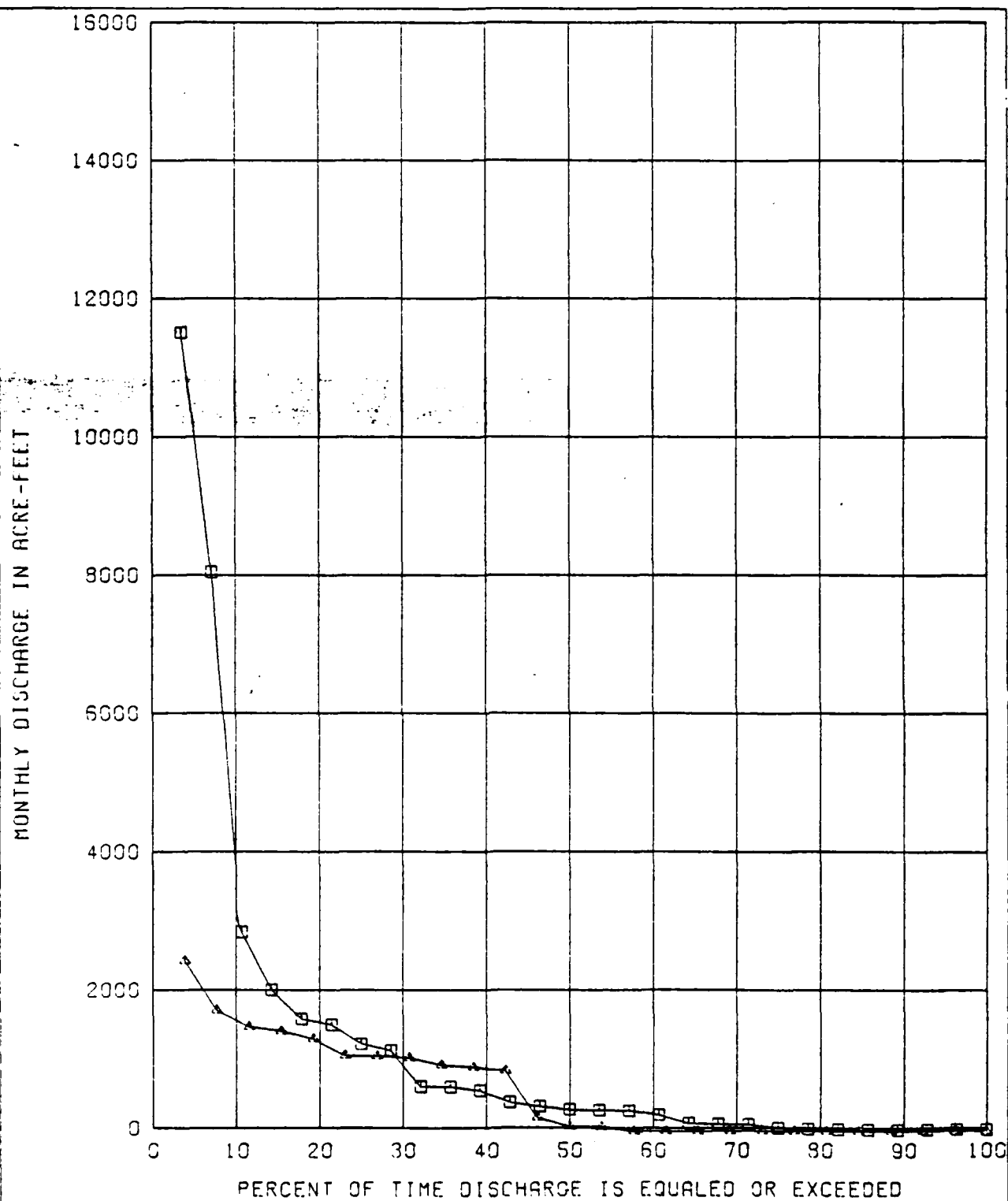
O.C. FISHER LAKE

FLOW DURATION CURVES AT DAM SITE

JULY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 19



LEGEND

□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1952)

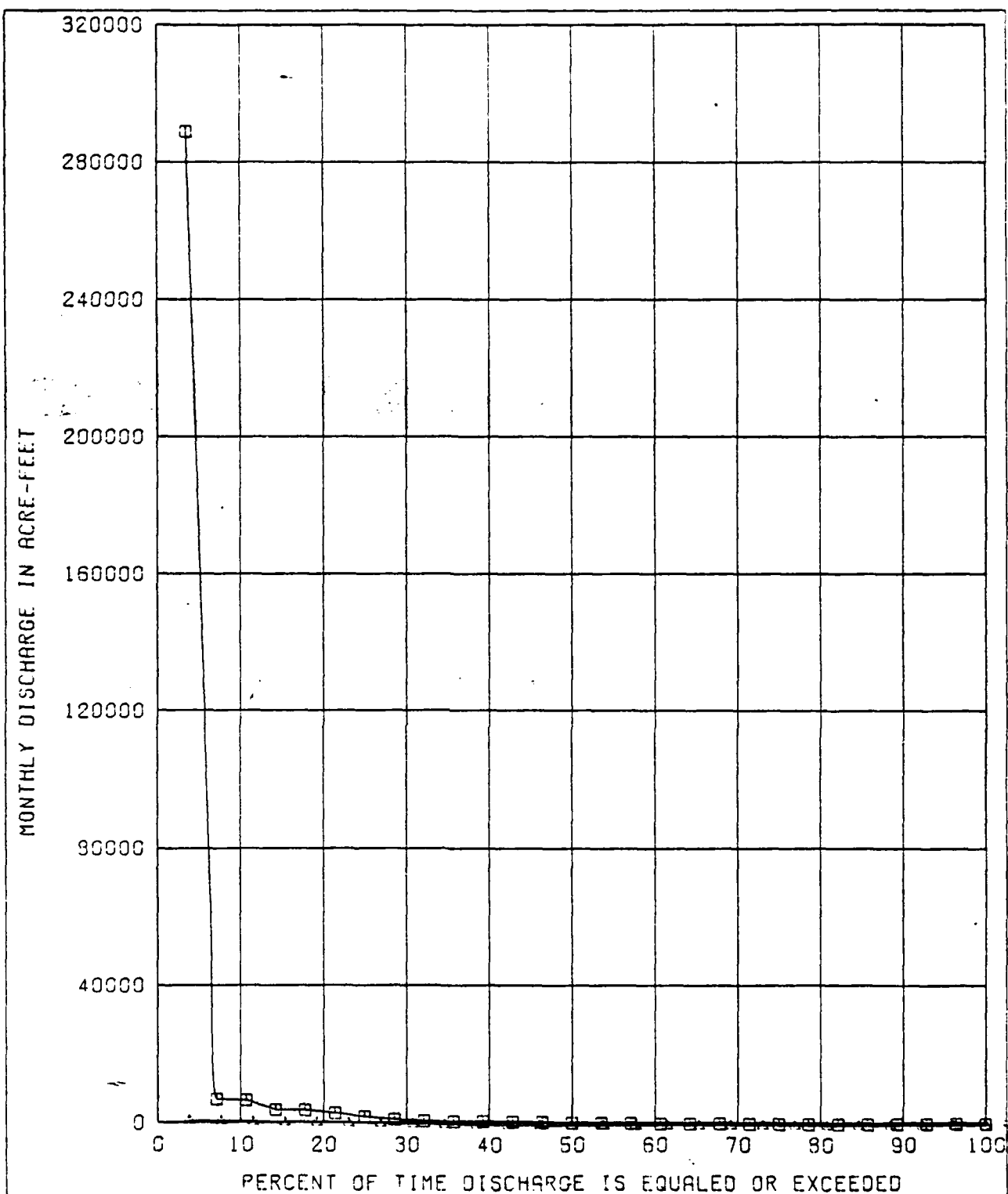
▲ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

COLORADO RIVER BASIN, TEXAS
O.C. FISHER LAKE

FLOW DURATION CURVES AT DAM SITE
AUGUST FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 20



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1952)

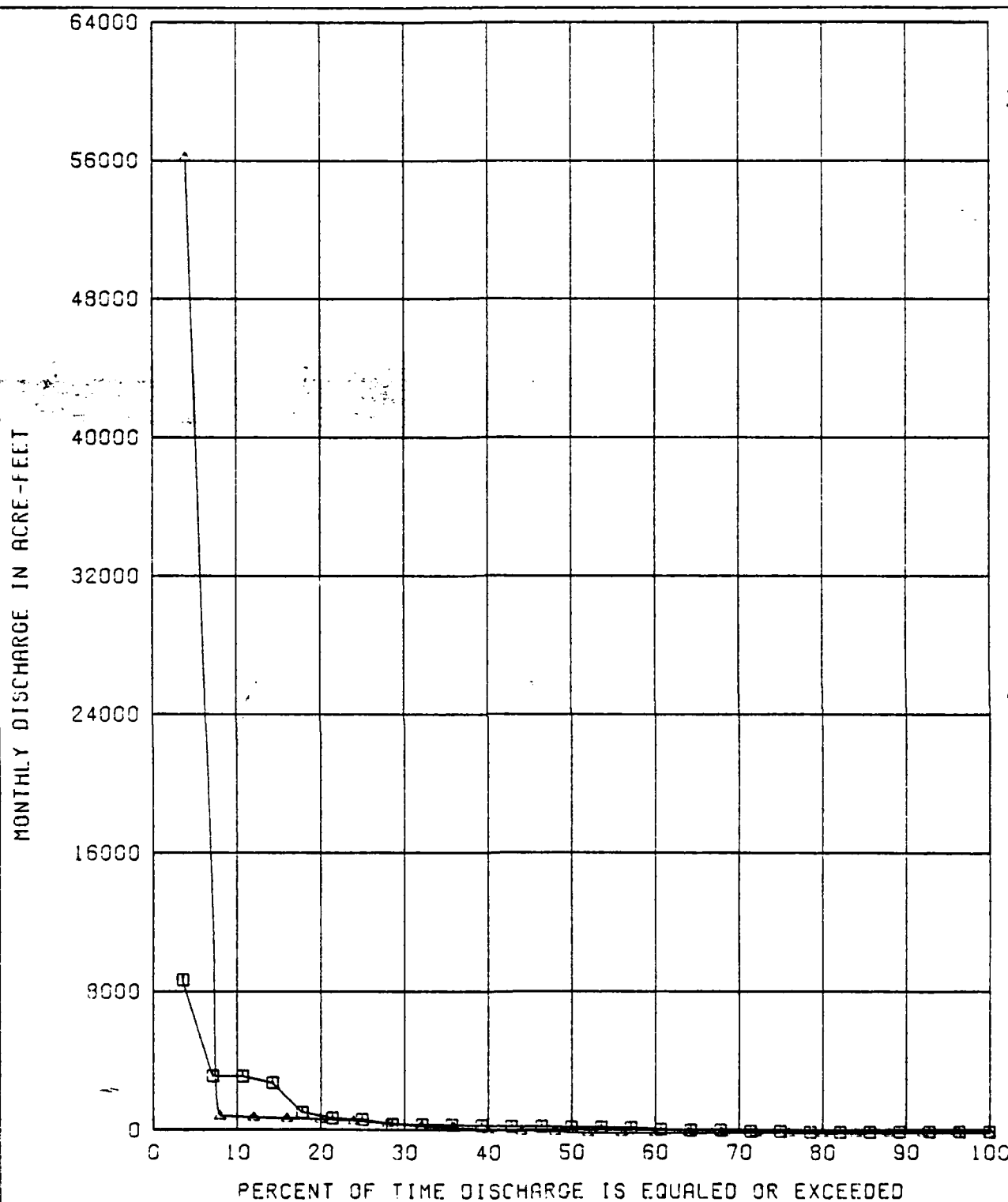
▲ — ▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

COLORADO RIVER BASIN, TEXAS
O.C. FISHER LAKE

FLOW DURATION CURVES AT DAM SITE
SEPTEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTRENGTH FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 21



LEGEND

□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1952)

▲ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

COLORADO RIVER BASIN, TEXAS

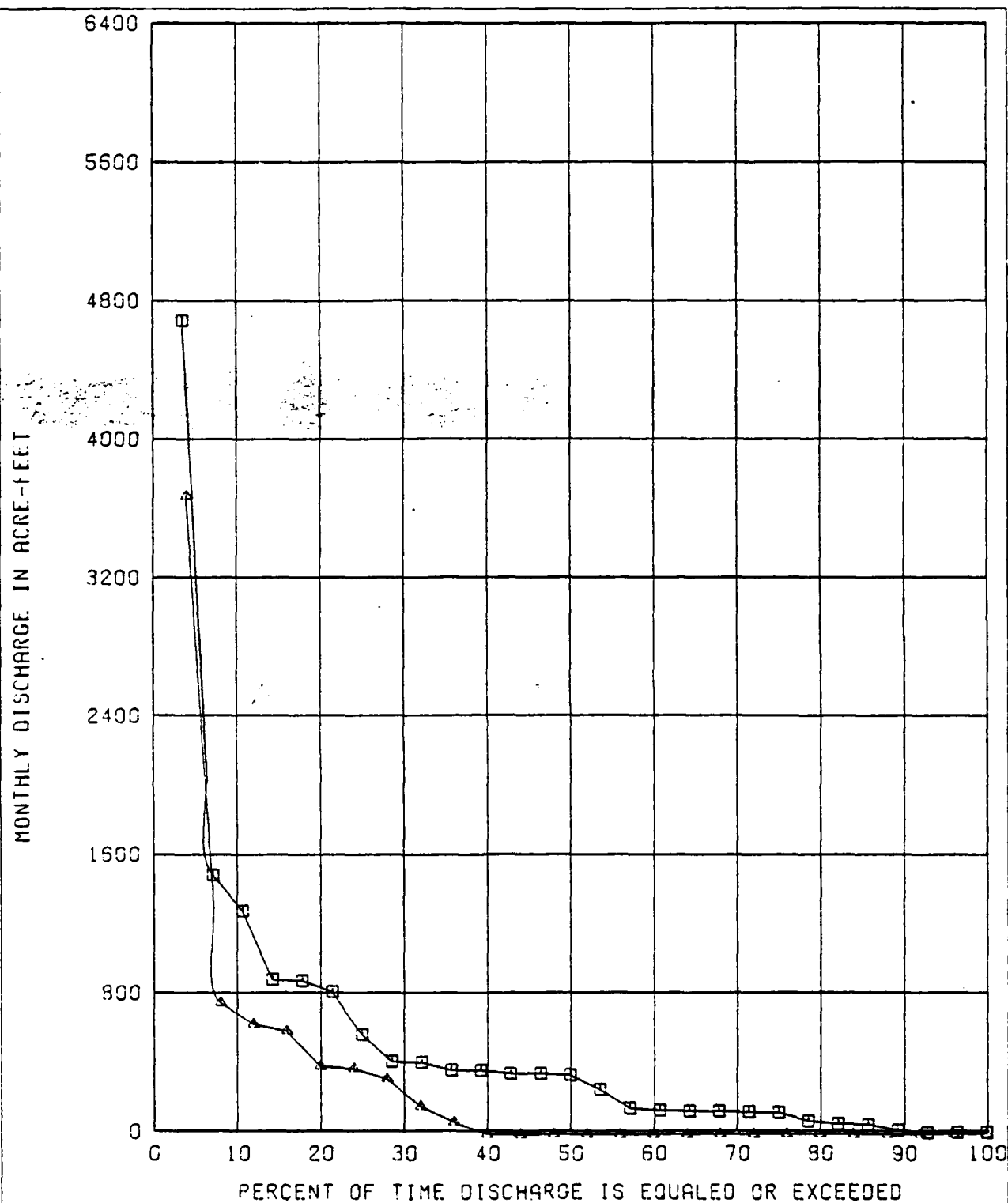
O.C. FISHER LAKE

FLOW DURATION CURVES AT DAM SITE

OCTOBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 22



LEGEND

□ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1952)

▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1979)

COLORADO RIVER BASIN, TEXAS

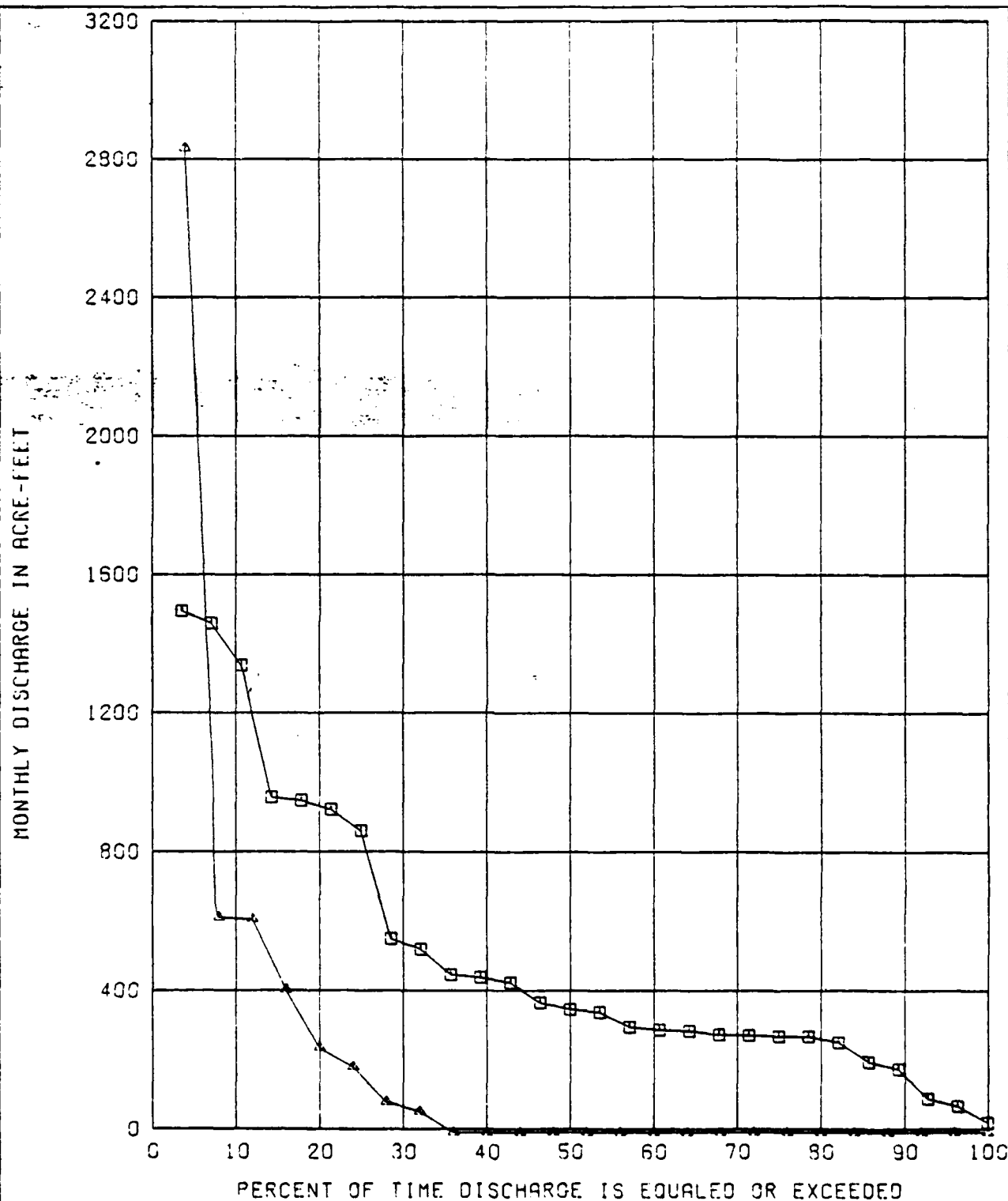
O.C. FISHER LAKE

FLOW DURATION CURVES AT DAM SITE

NOVEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 23



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1924-1952)

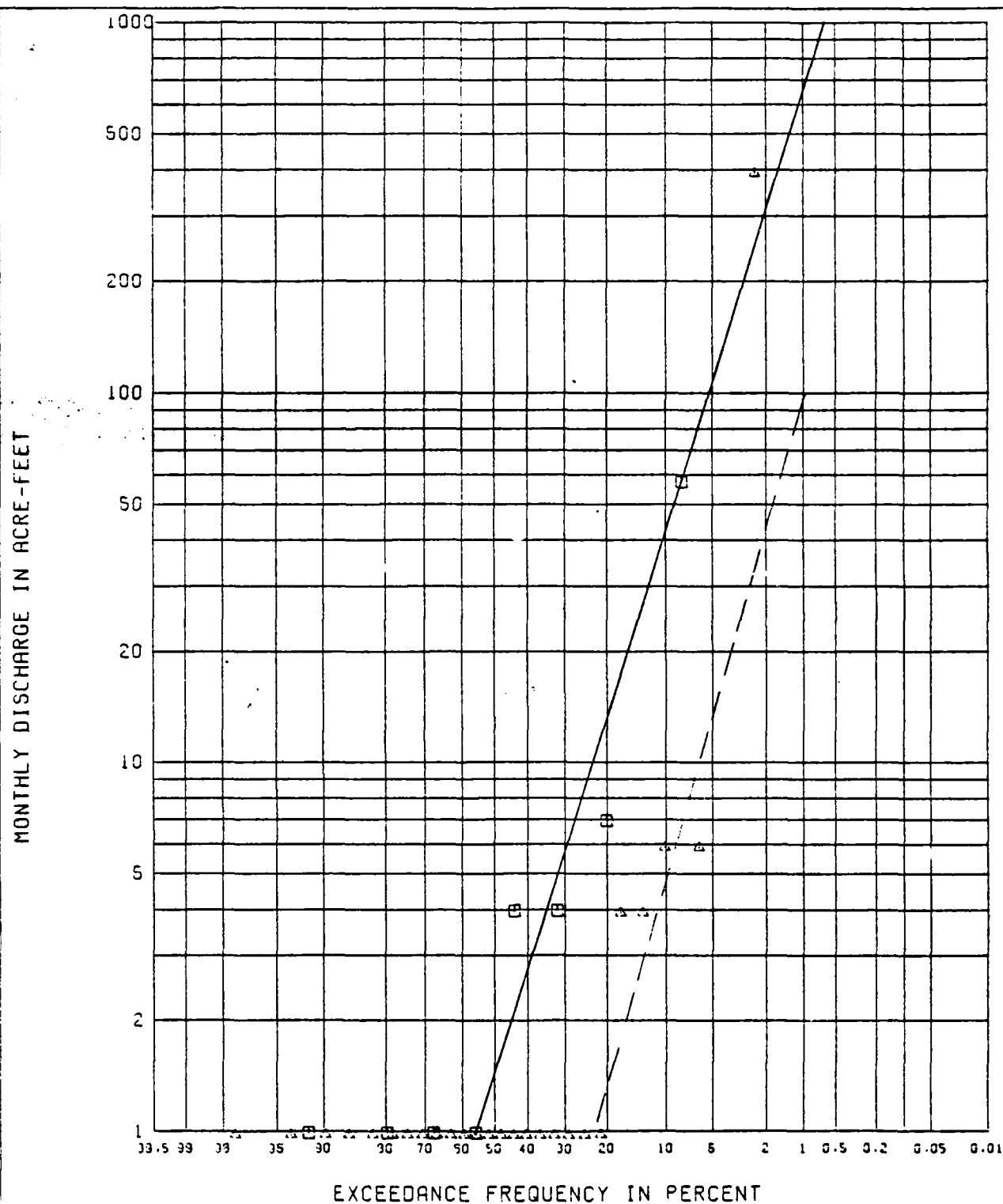
▲ — ▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1952-1978)

COLORADO RIVER BASIN, TEXAS
O.C. FISHER LAKE

FLOW DURATION CURVES AT DAM SITE
DECEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 24



LEGEND

—■— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1940-1949)

-▲- POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

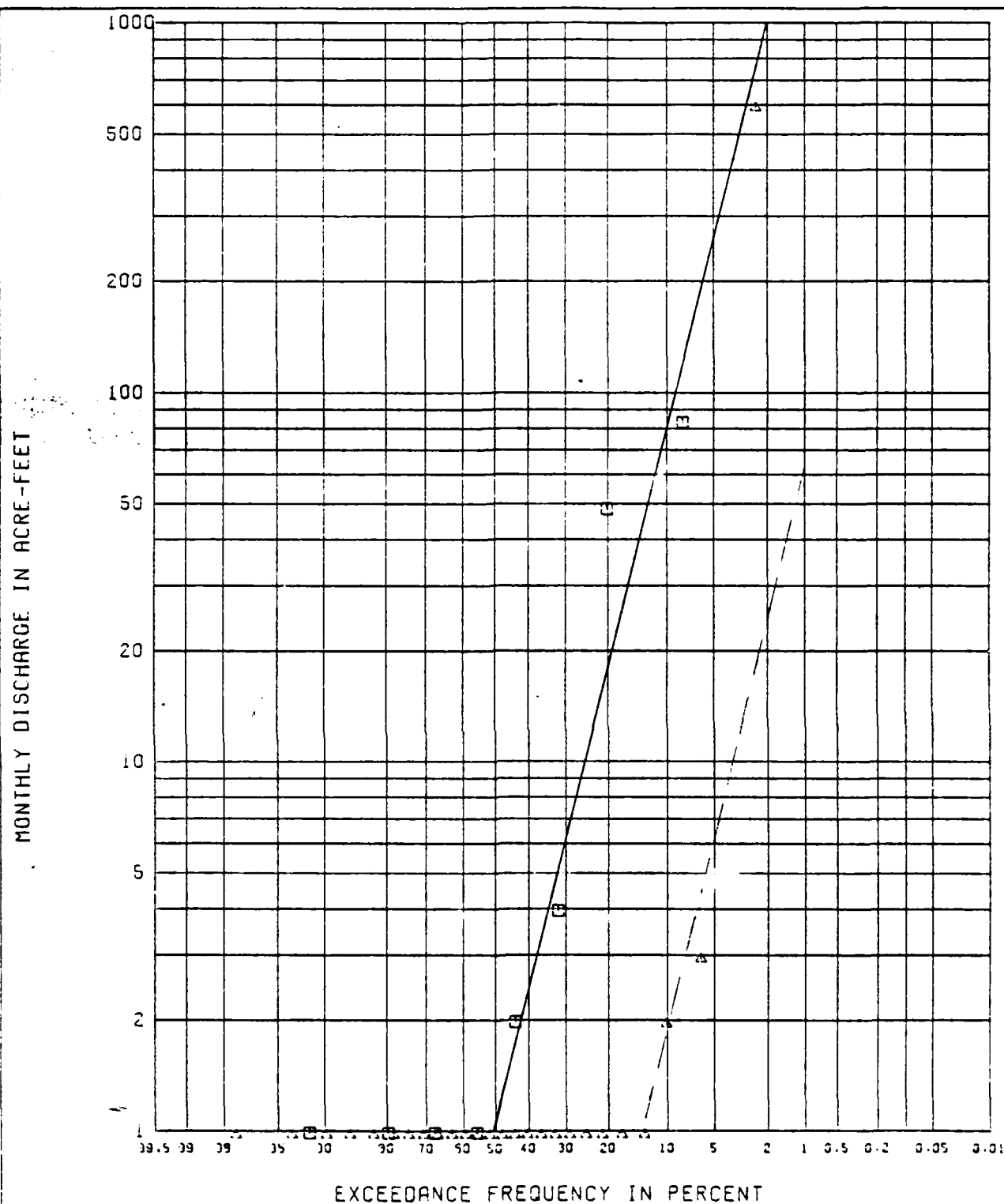
COLORADO RIVER BASIN, TEXAS

HORD'S CREEK LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
JANUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 1



LEGEND

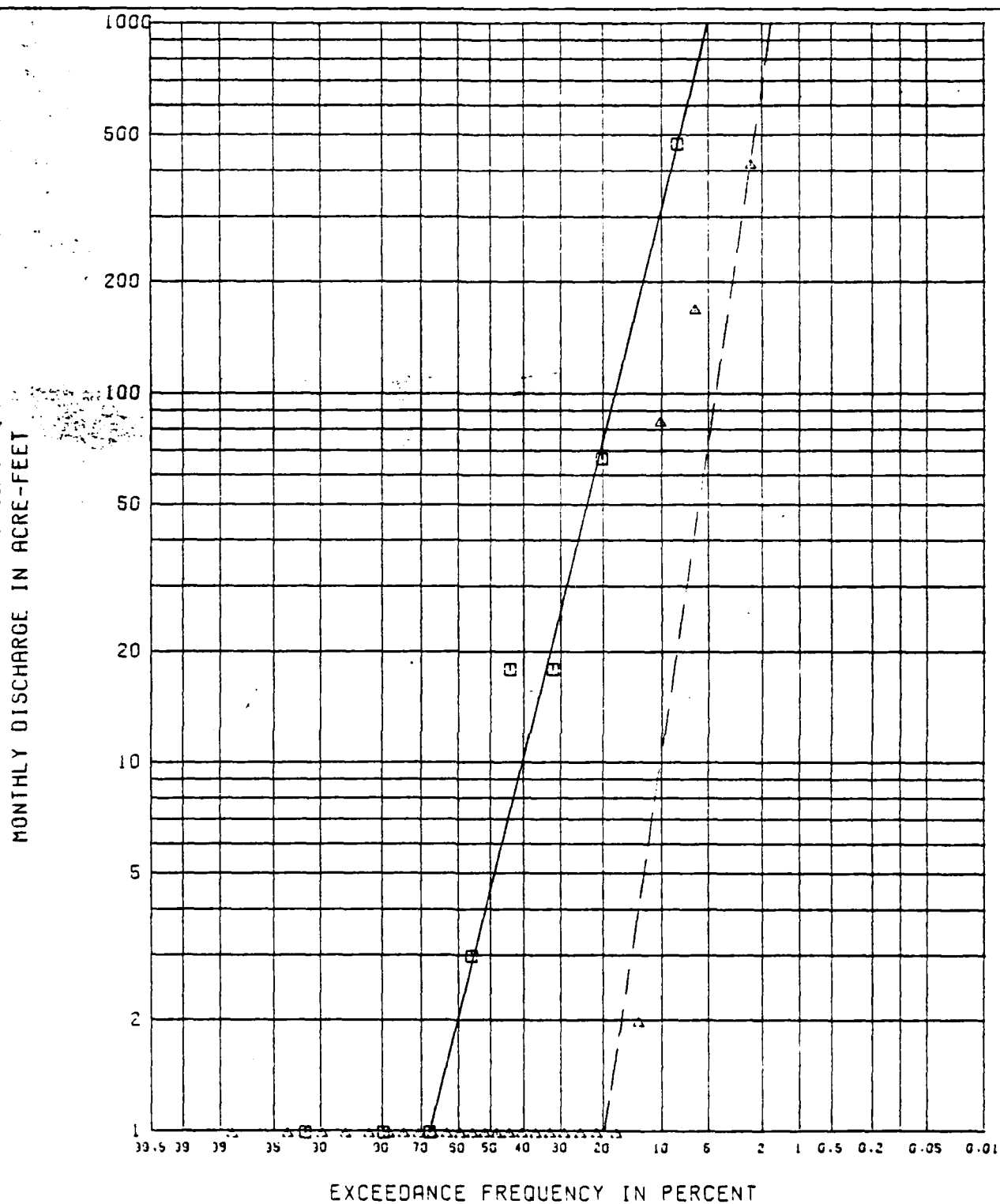
— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1940-1949)

- - - POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

COLORADO RIVER BASIN, TEXAS
HORDS CREEK LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
FEBRUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE-2



LEGEND

—■— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1940-1943)

- - -△- POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

COLORADO RIVER BASIN, TEXAS

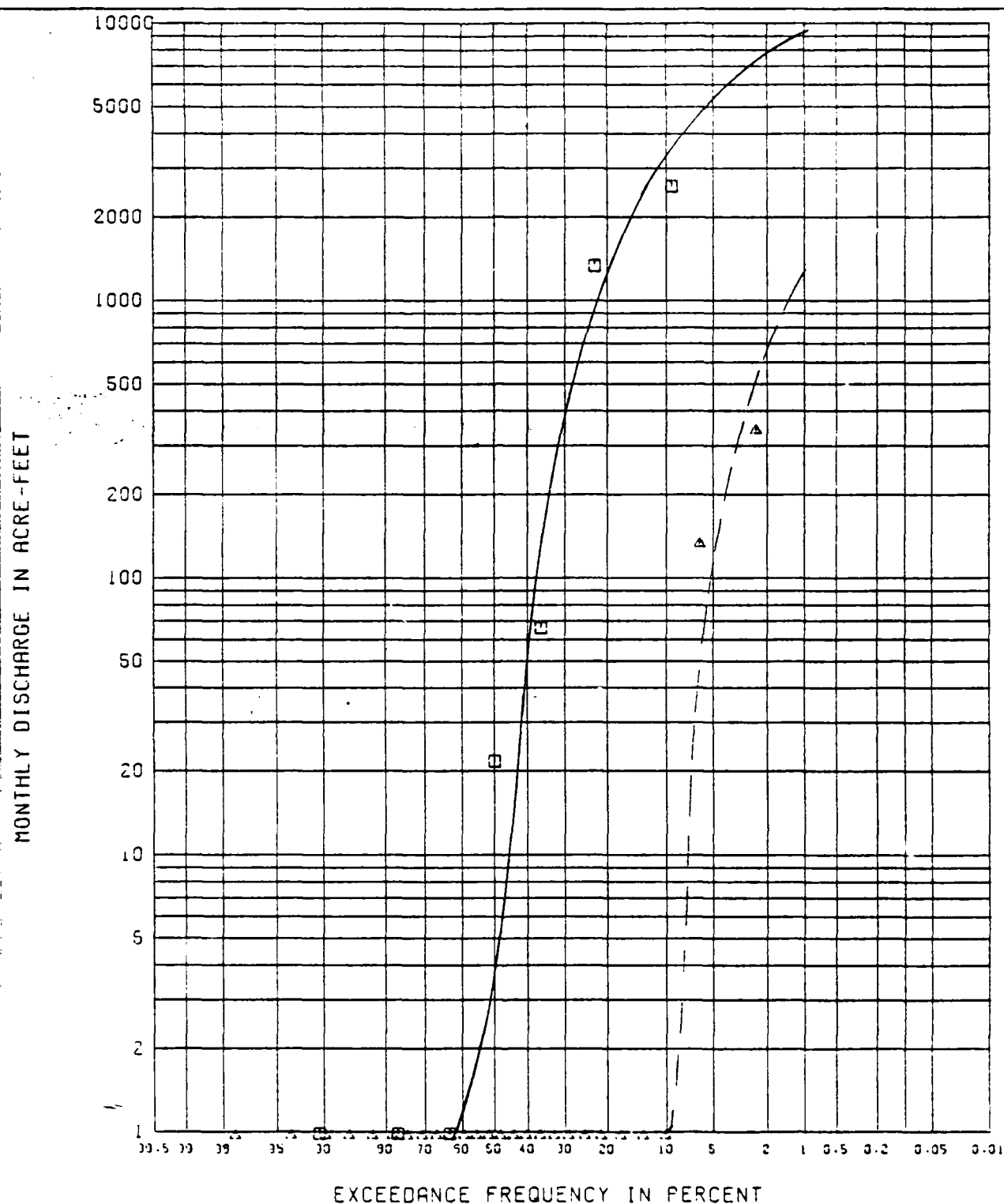
HOROS CREEK LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

MARCH FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 3



LEGEND

—■— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1940-1949)

- - -▲- - POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

COLORADO RIVER BASIN, TEXAS

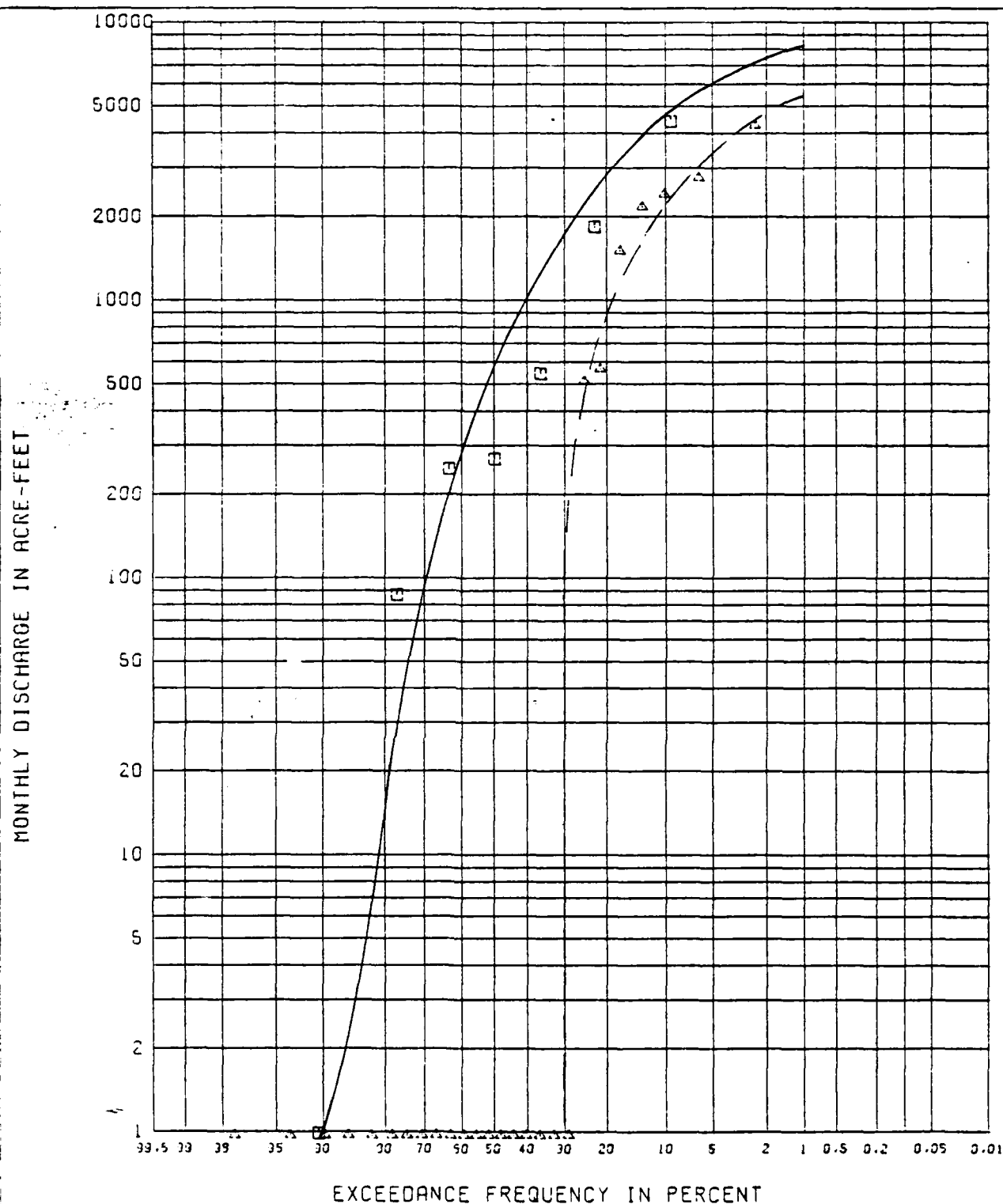
HORDS CREEK LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

APRIL FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 4



LEGEND

—■— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1940-1948)

- - -▲- - POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

COLORADO RIVER BASIN, TEXAS

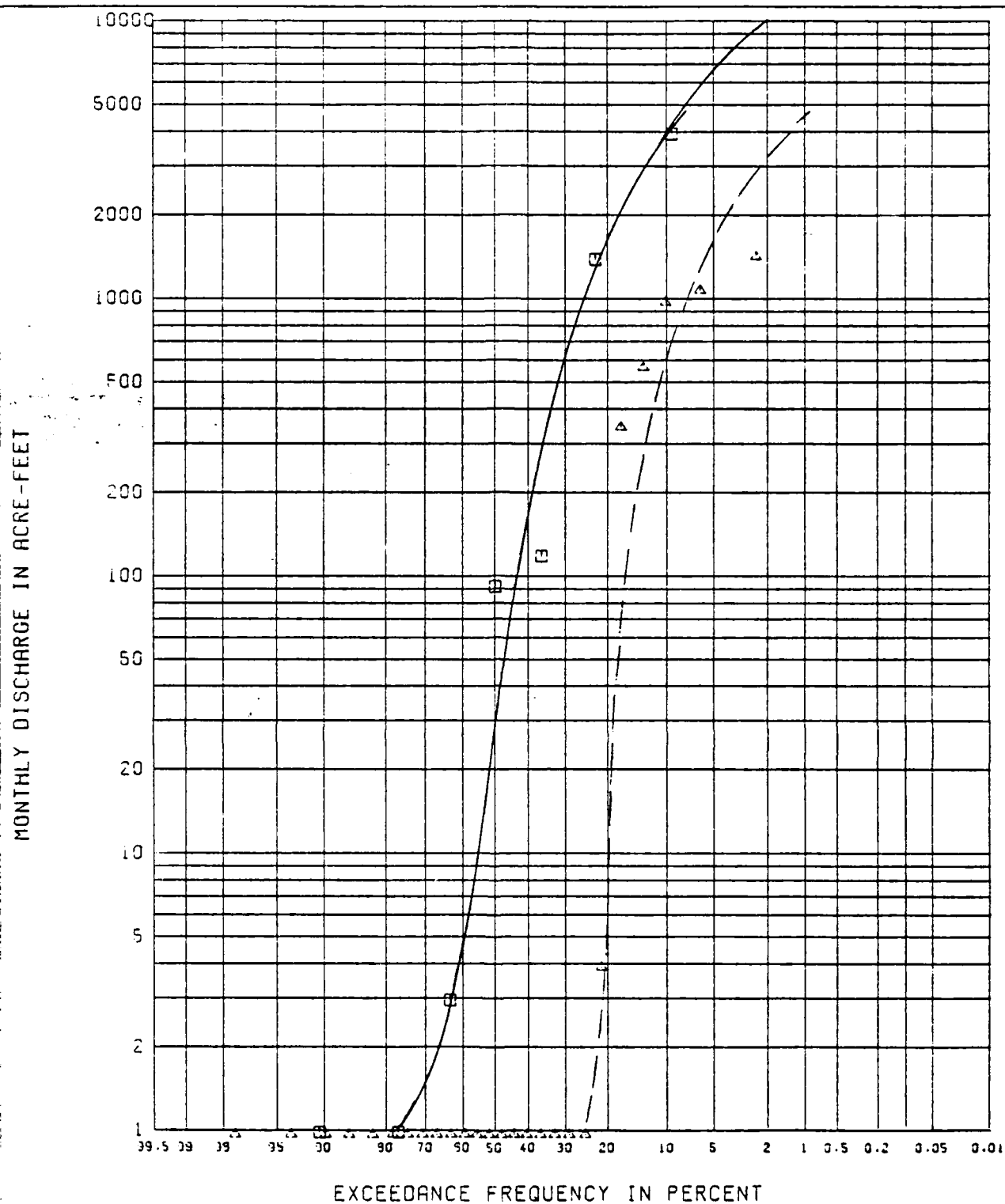
HORSESHOE CREEK LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

MAY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 5



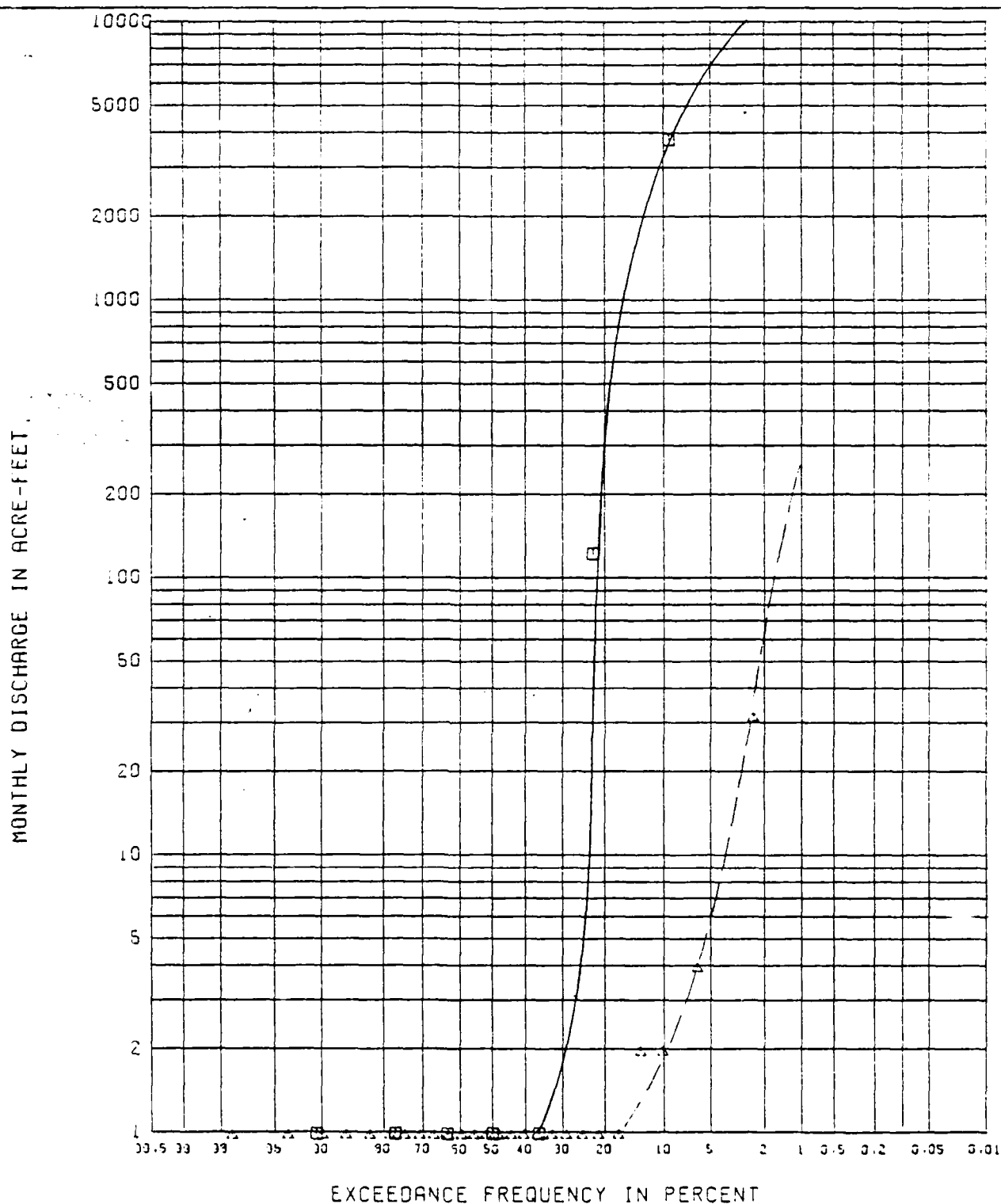
LEGEND

- — □ PRE-IMPOUNDMENT CONDITIONS
 (PERIOD OF RECORD 1940-1948)
- △ — △ POST-IMPOUNDMENT CONDITIONS
 (PERIOD OF RECORD 1953-1979)

COLORADO RIVER BASIN, TEXAS
 HORDS CREEK LAKE
 DISCHARGE-FREQUENCY RELATIONS
 AT DAM SITE
 JUNE FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
 TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
 EVALUATION REPORT OF DECEMBER 1980

PLATE 6



LEGEND

—■— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1940-1949)

-▲- POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

COLORADO RIVER BASIN, TEXAS

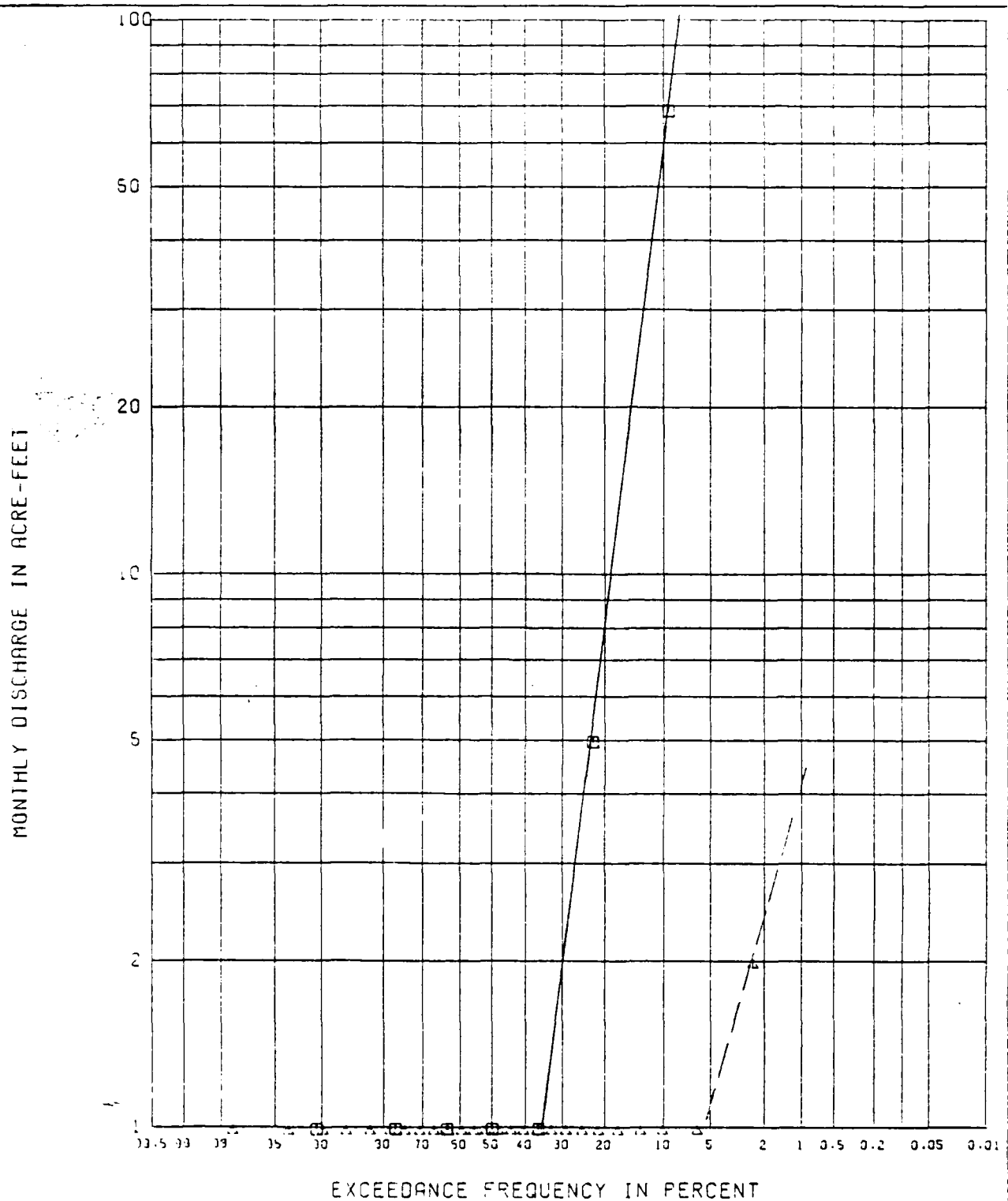
HORDS CREEK LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

JULY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 7



LEGEND

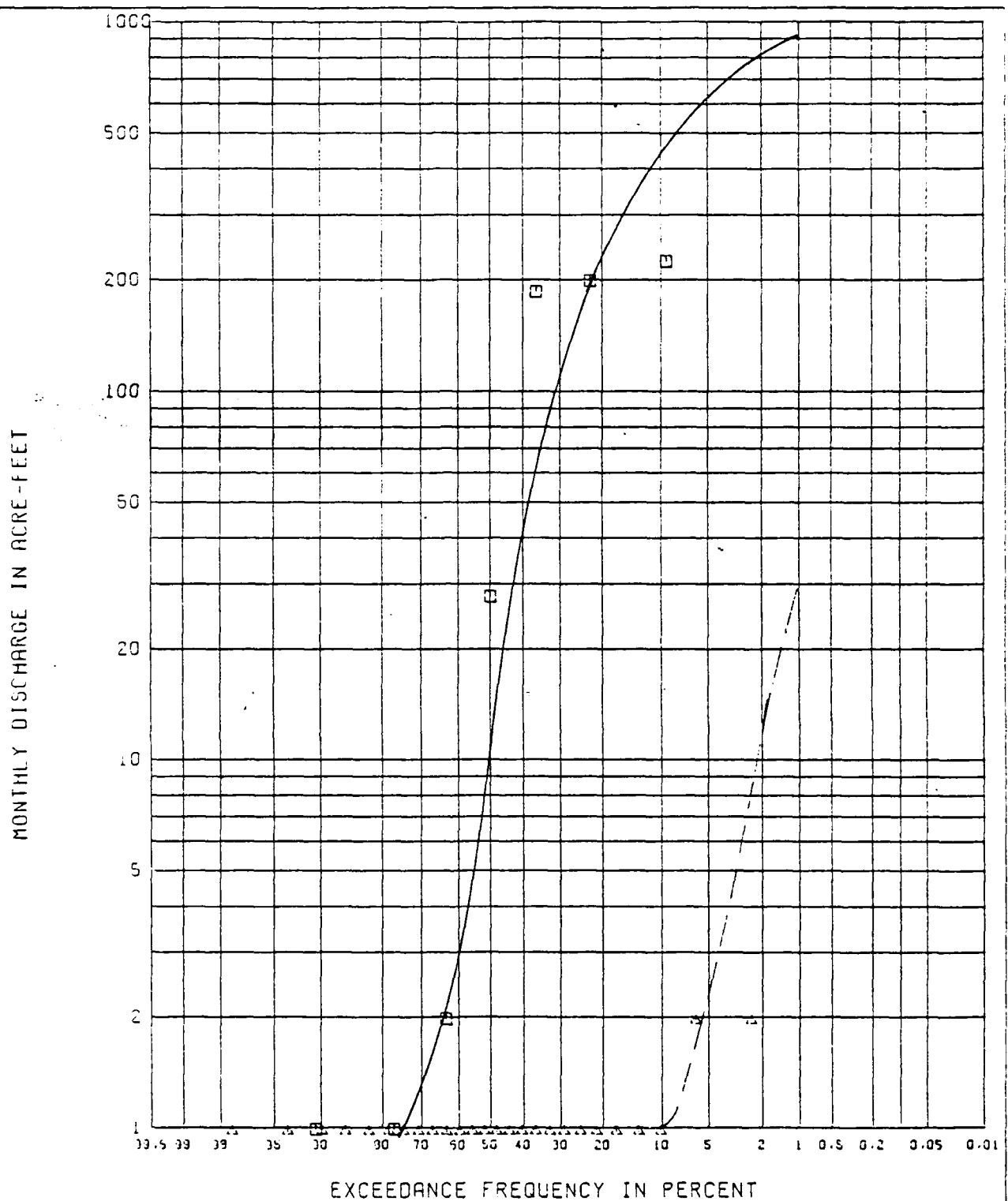
—■— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1940-1949)

- - -△- POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

COLORADO RIVER BASIN, TEXAS
HORDS CREEK LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
AUGUST FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 8



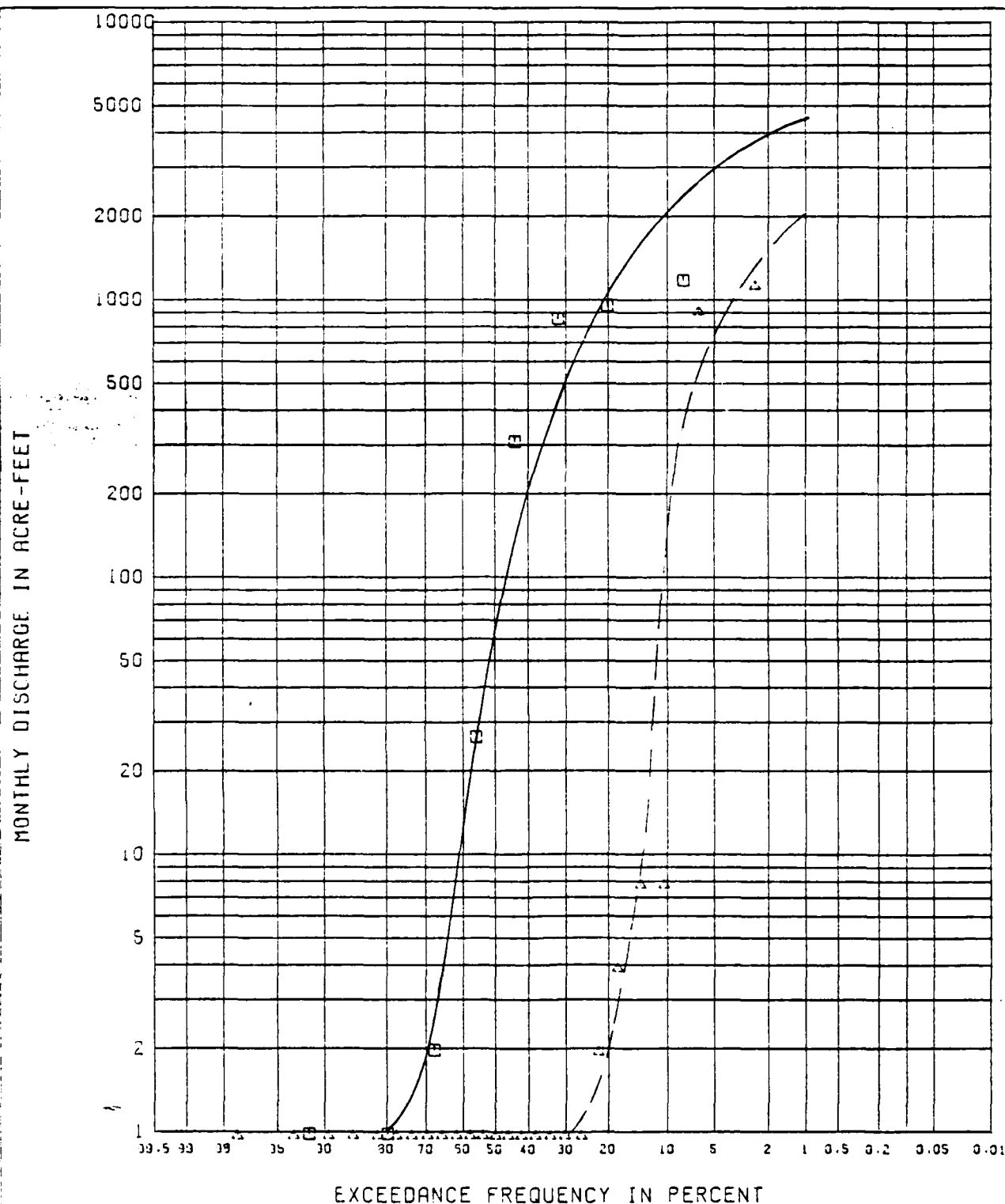
LEGEND

- — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1940-1949)
- △ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

COLORADO RIVER BASIN, TEXAS
HORDS CREEK LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
SEPTEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 9



LEGEND

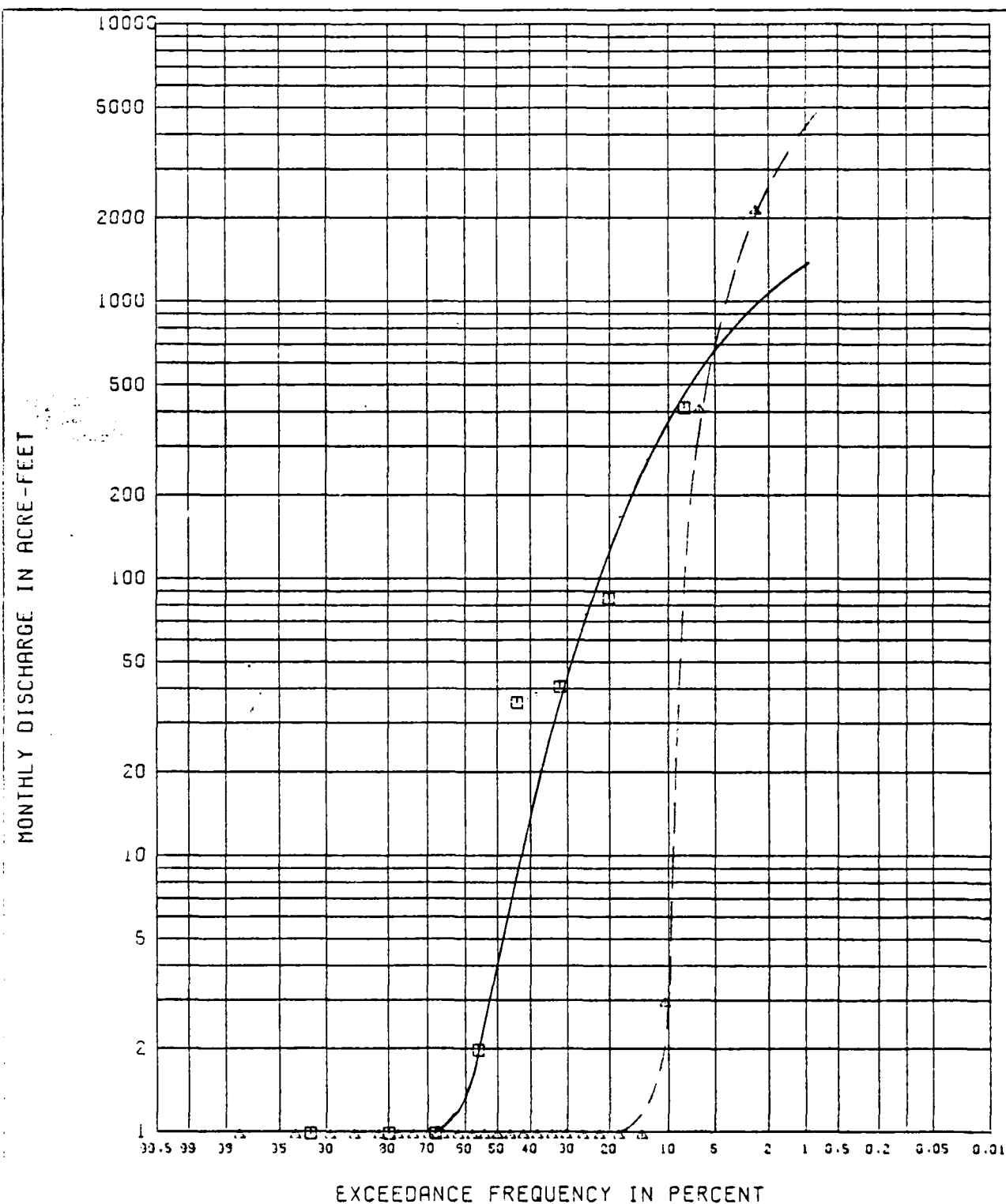
—■— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1940-1949)

- - -▲- POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

COLORADO RIVER BASIN, TEXAS
HORDS CREEK LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
OCTOBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 10



LEGEND

— □ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1940-1949)

- - △ - - POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

COLORADO RIVER BASIN, TEXAS

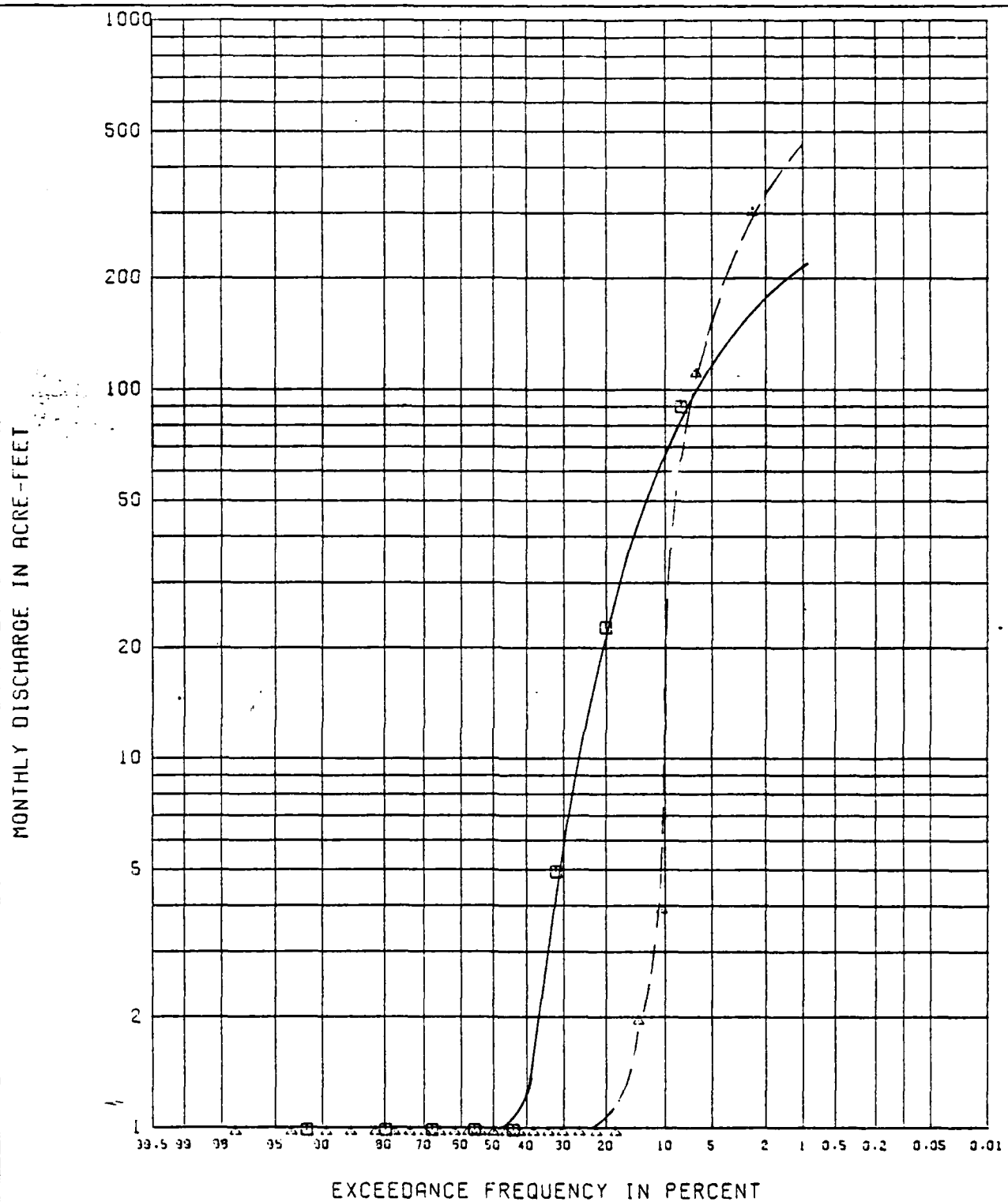
HORDS CREEK LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

NOVEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 11

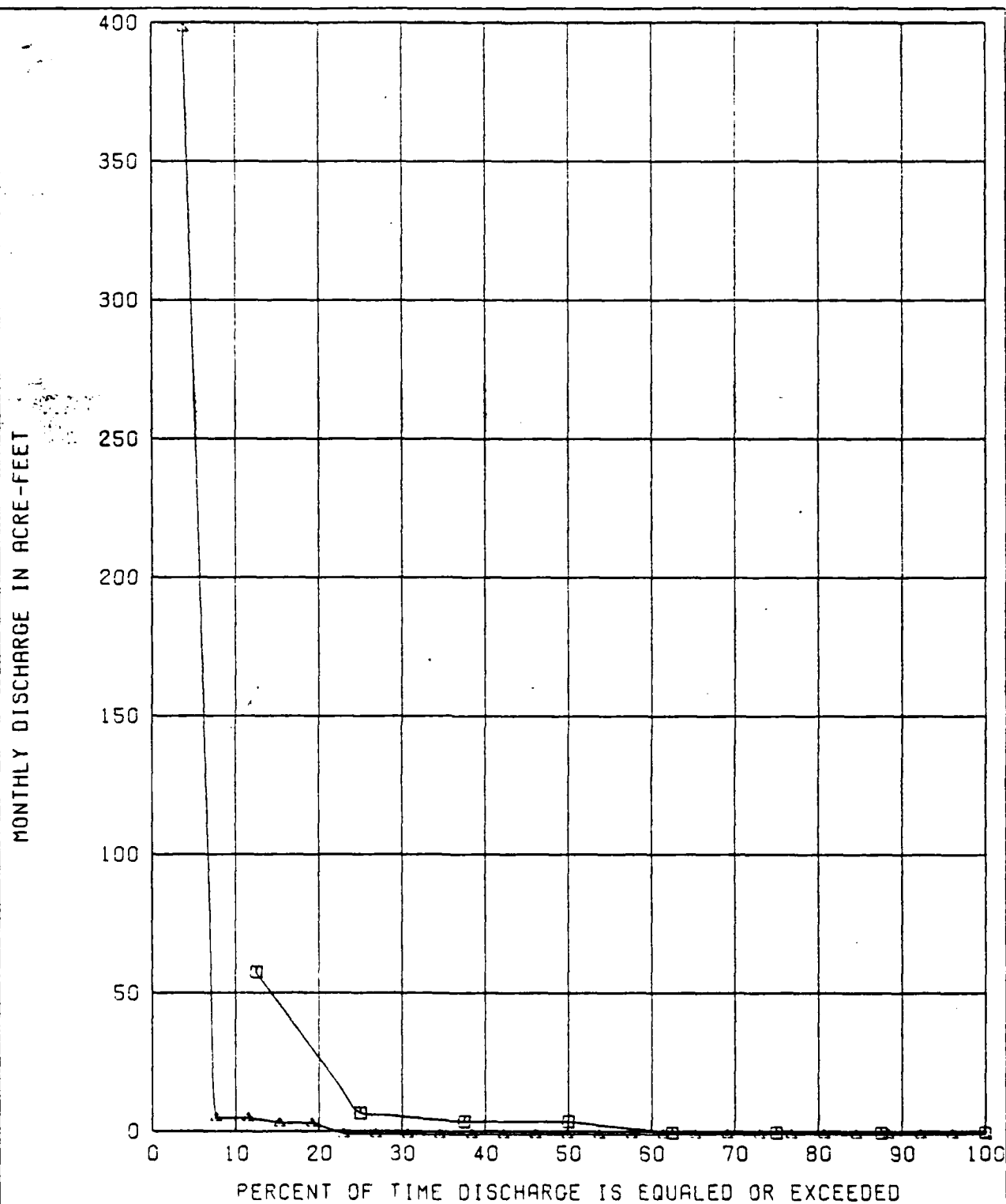


LEGEND

- PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1940-1949)
- - -△- POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

COLORADO RIVER BASIN, TEXAS
HORDS CREEK LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
DECEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1940-1949)

▲ — ▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

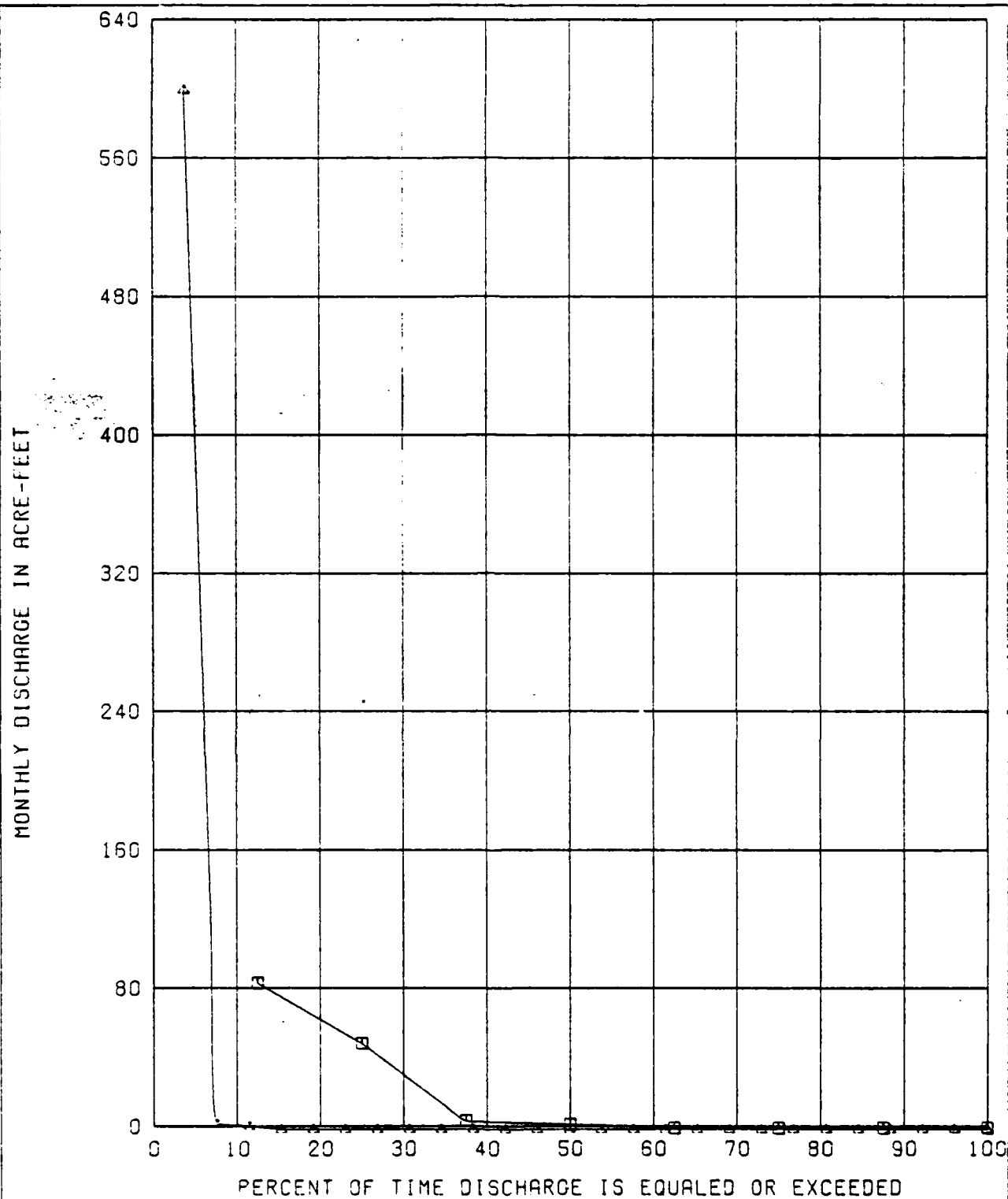
COLORADO RIVER BASIN, TEXAS

HORDS CREEK LAKE

FLOW DURATION CURVES AT DAM SITE
JANUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 13



LEGEND

□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1940-1949)

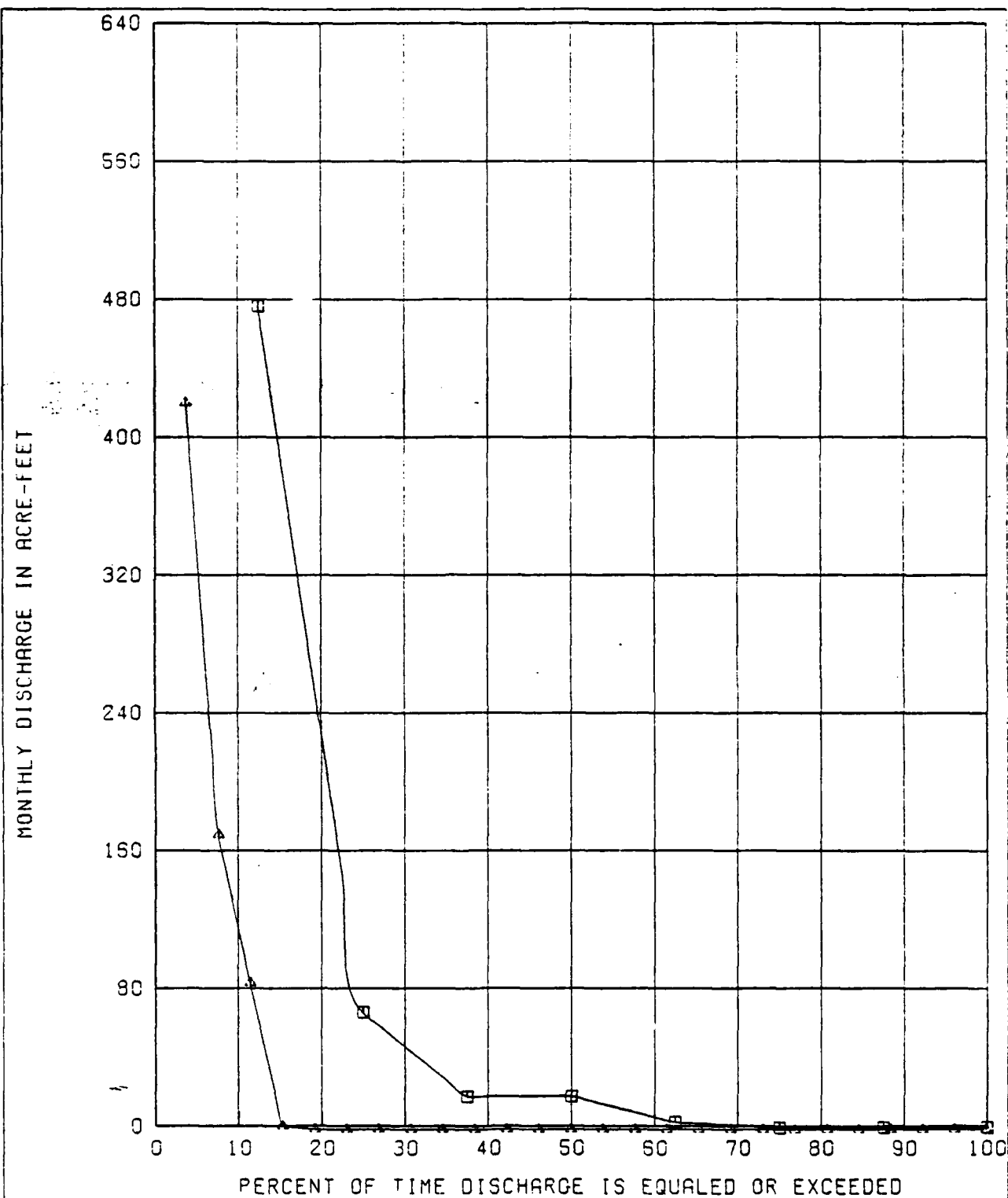
△ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

COLORADO RIVER BASIN, TEXAS
HORDS CREEK LAKE

FLOW DURATION CURVES AT DAM SITE
FEBRUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 14



LEGEND

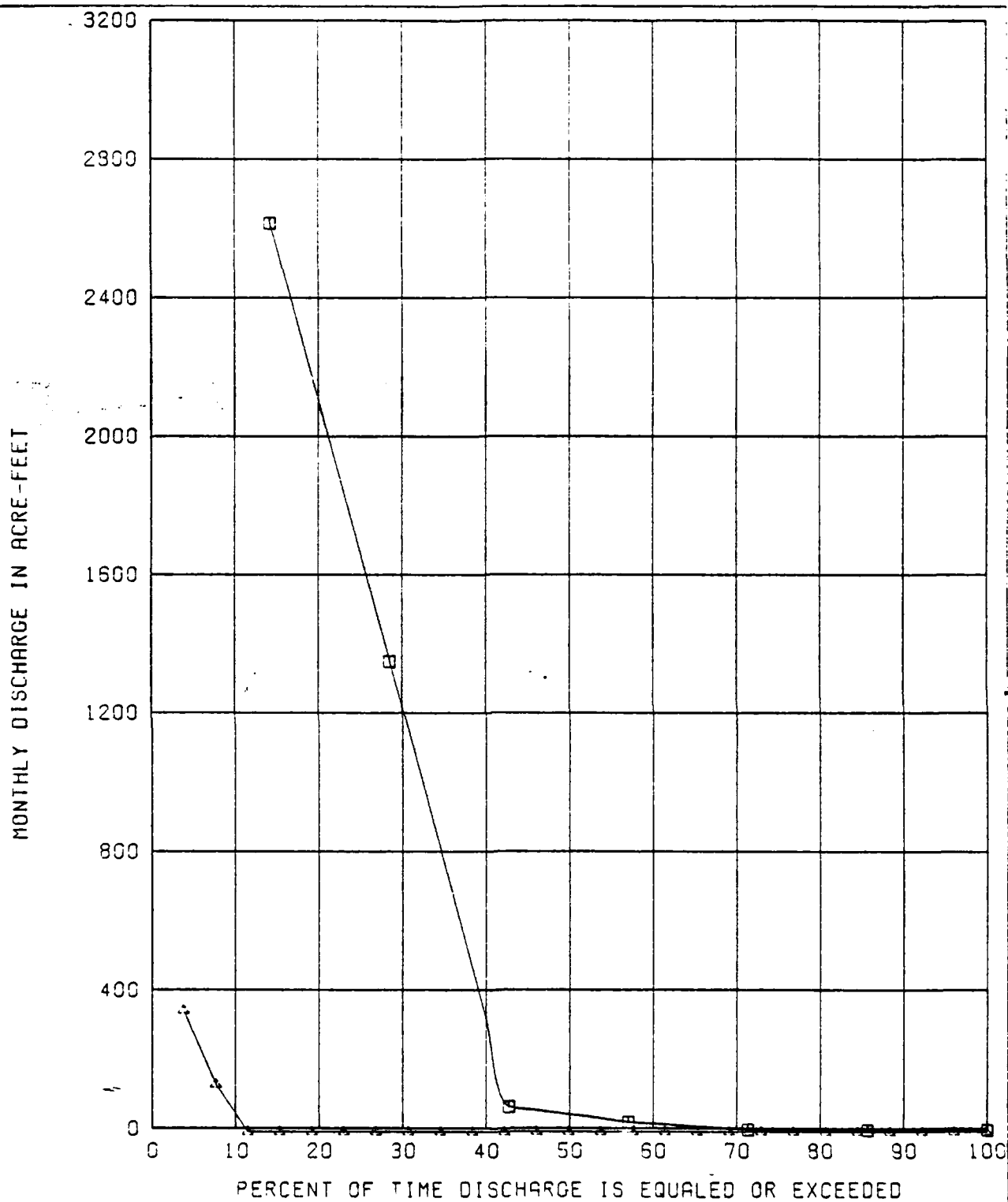
- PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1940-1949)
- ▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

COLORADO RIVER BASIN, TEXAS
HORDS CREEK LAKE

FLOW DURATION CURVES AT DAM SITE
MARCH FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 15



LEGEND

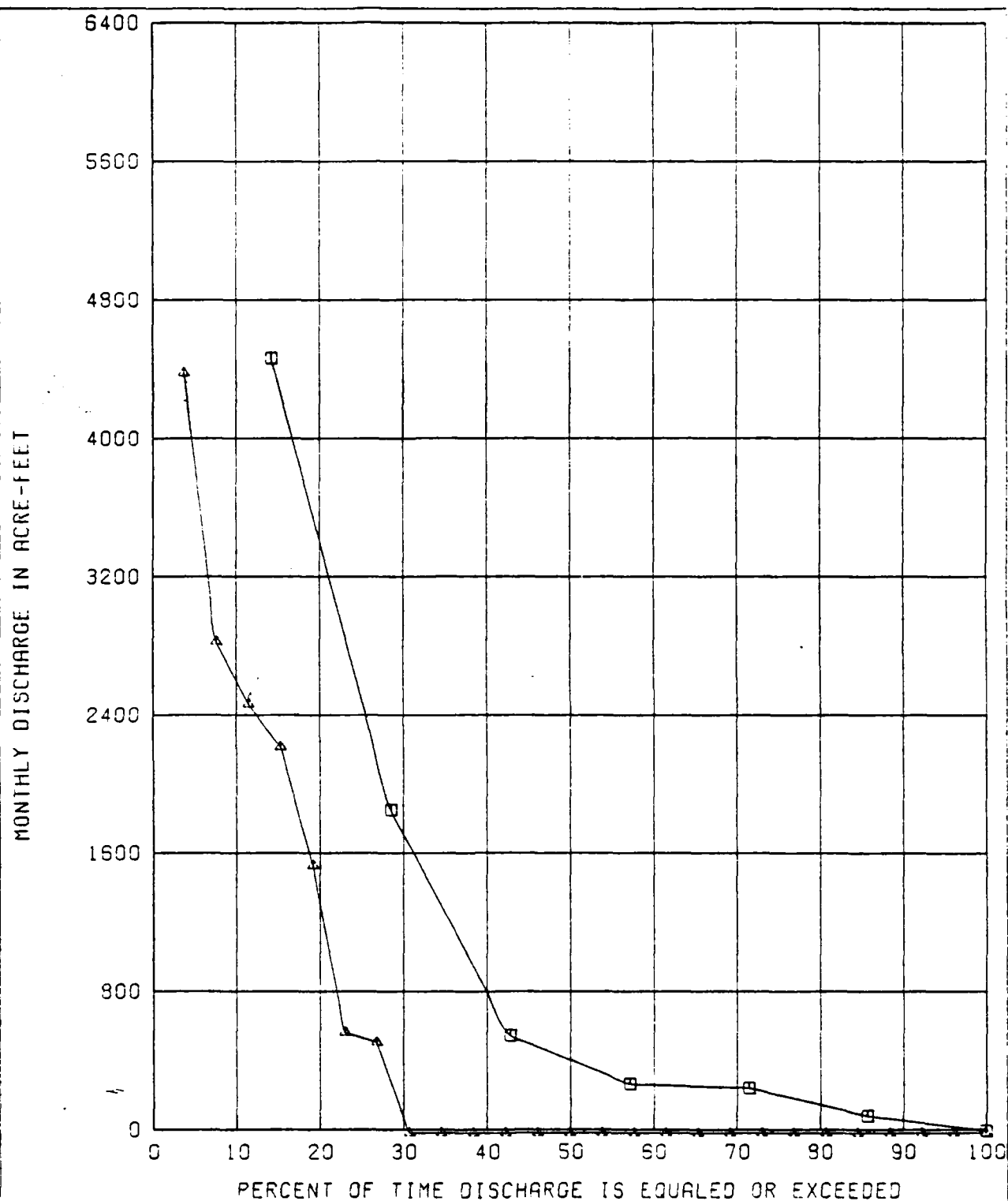
- — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1940-1949)
- ▲ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

COLORADO RIVER BASIN, TEXAS
HORDS CREEK LAKE

FLOW DURATION CURVES AT DAM SITE
APRIL FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 16



LEGEND

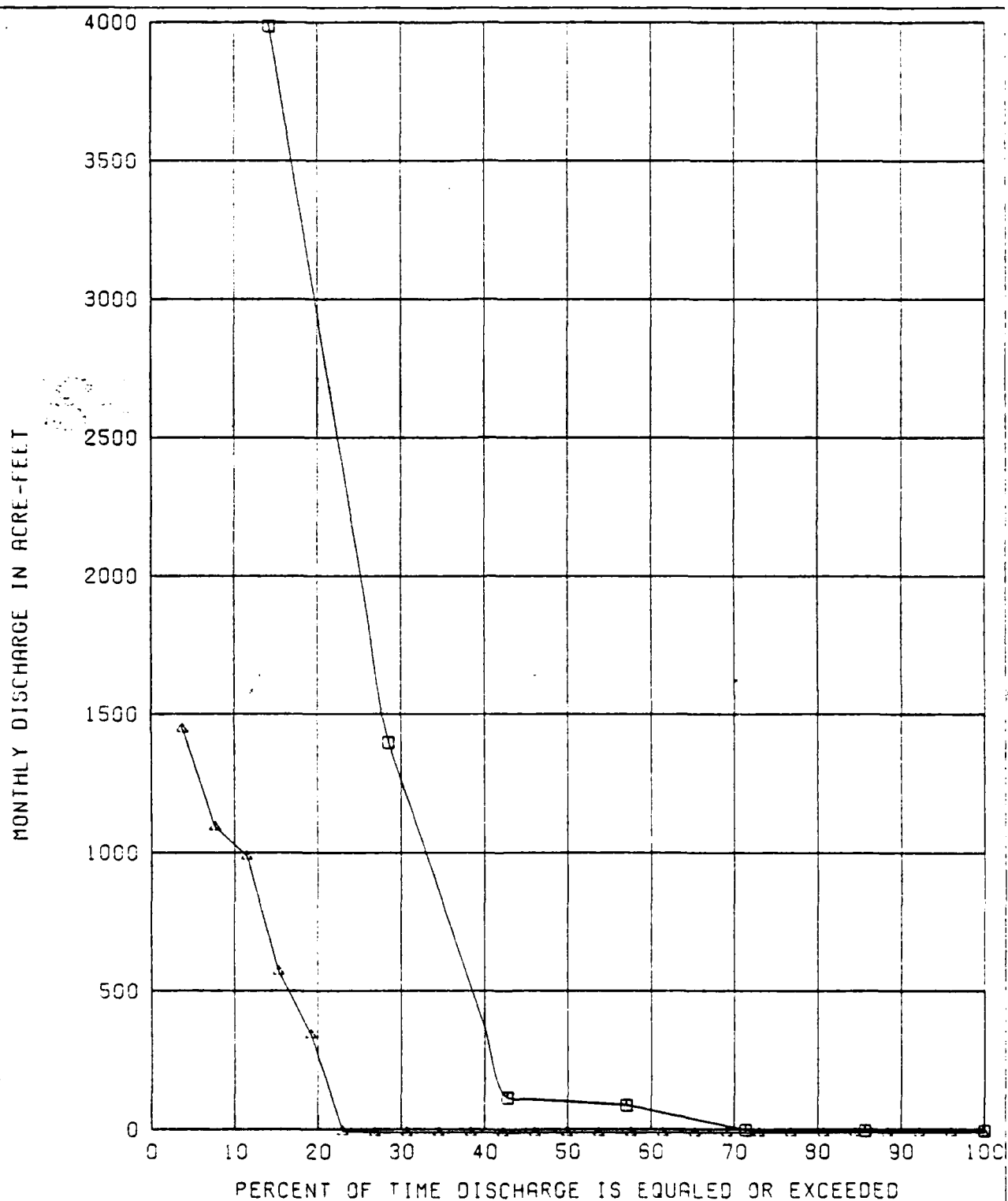
- — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1940-1949)
- ▲ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

COLORADO RIVER BASIN, TEXAS
HORDS CREEK LAKE

FLOW DURATION CURVES AT DAM SITE
MAY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 17



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1940-1949)

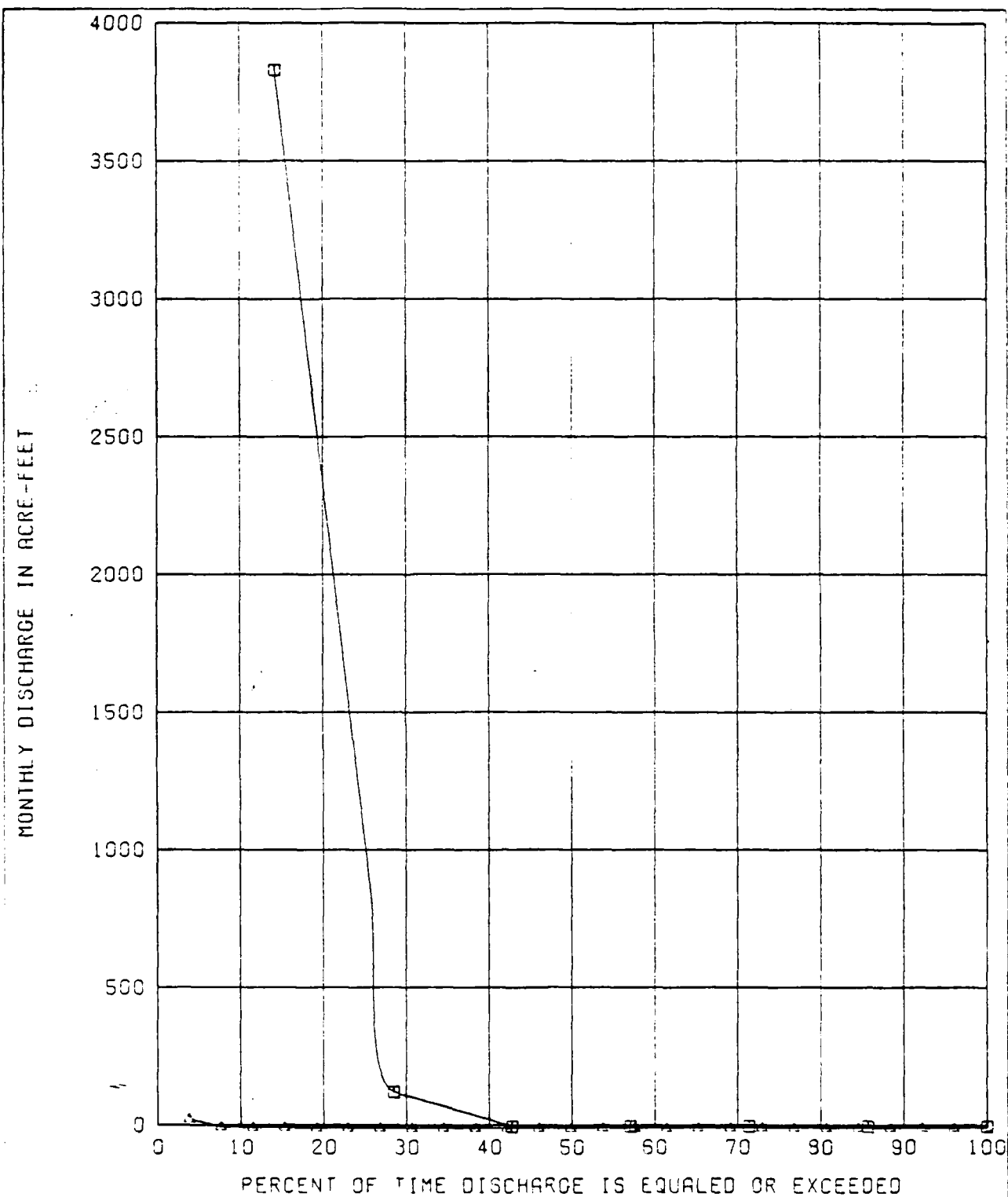
▲ — ▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

COLORADO RIVER BASIN, TEXAS
HORDS CREEK LAKE

FLOW DURATION CURVES AT DAM SITE
JUNE FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 18



LEGEND

— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1940-1949)

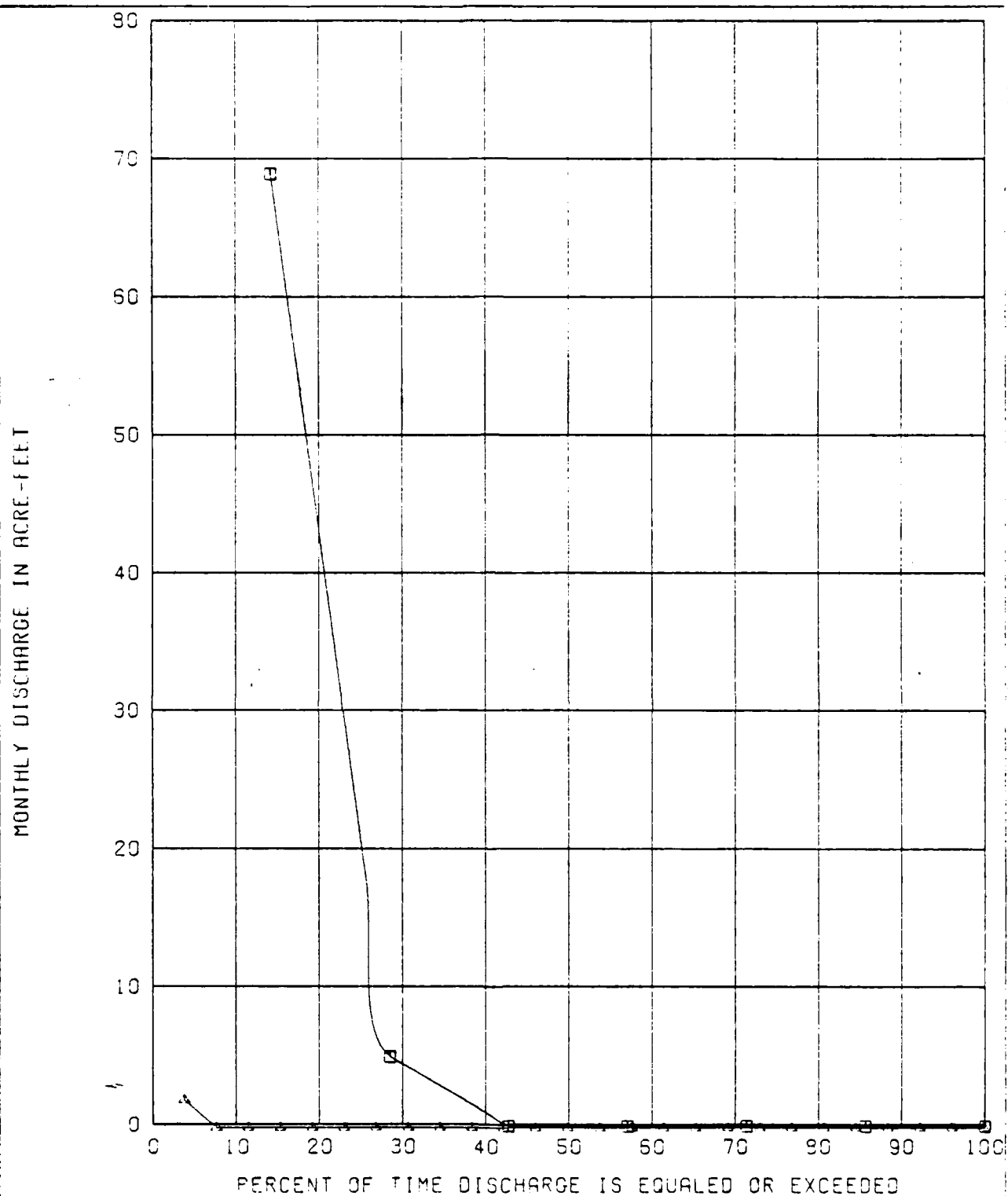
— POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

COLORADO RIVER BASIN, TEXAS
HORDS CREEK LAKE

FLOW DURATION CURVES AT DAM SITE
JULY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 19



LEGEND

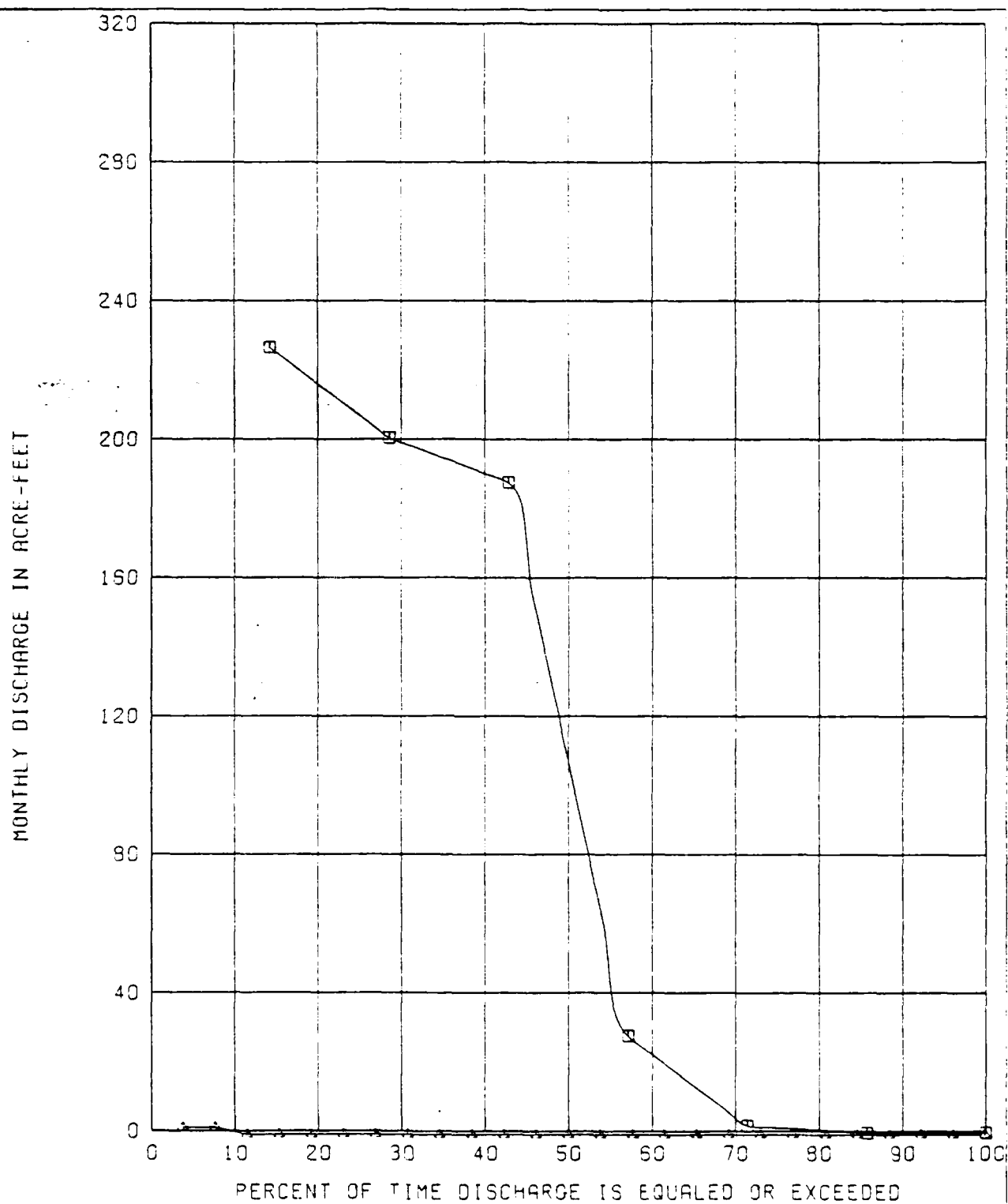
- PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1940-1949)
- ▲— POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

COLORADO RIVER BASIN, TEXAS
HORDS CREEK LAKE

FLOW DURATION CURVES AT DAM SITE
AUGUST FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 20



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1940-1949)

▲ — ▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

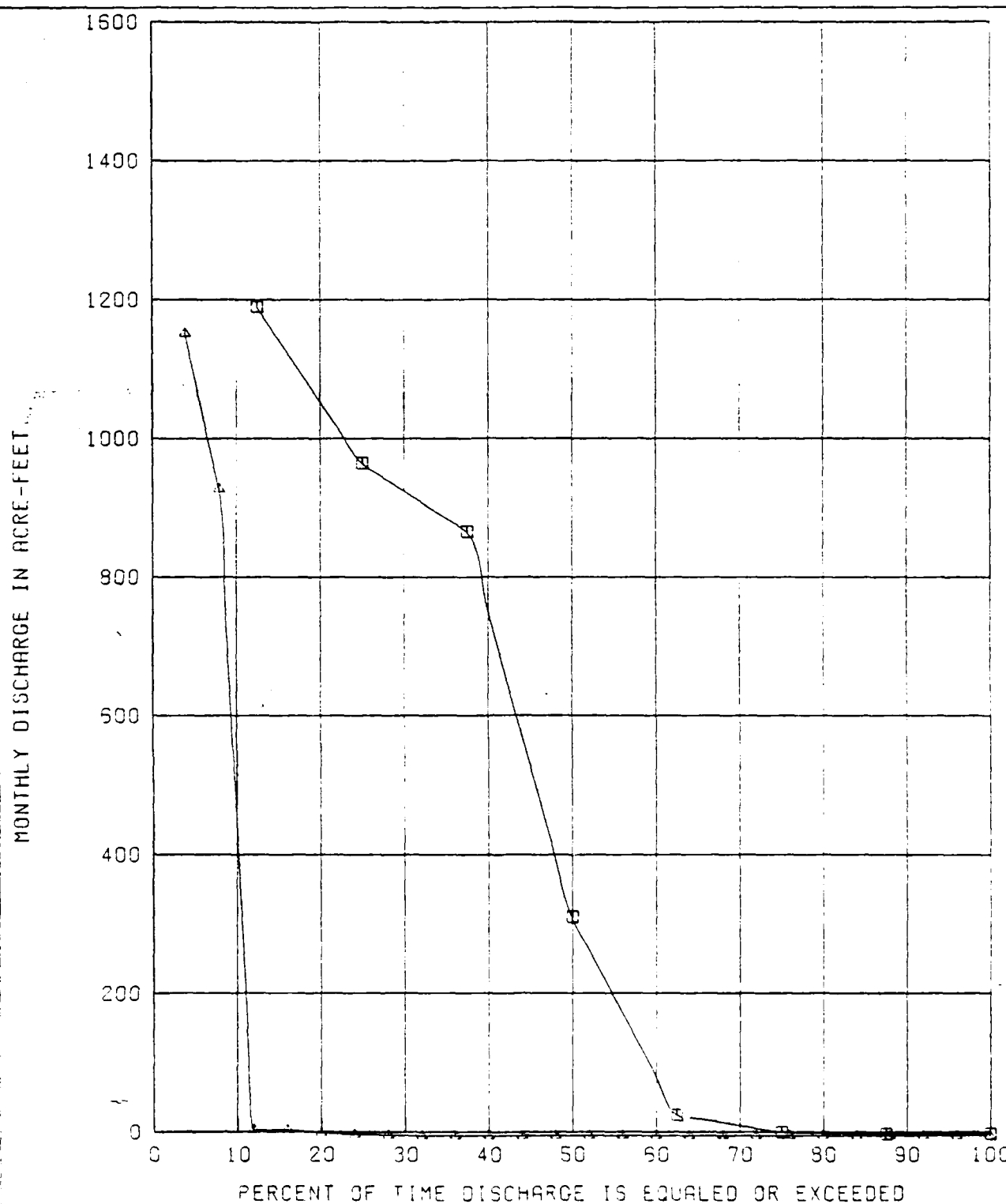
COLORADO RIVER BASIN, TEXAS

HORDS CREEK LAKE

FLOW DURATION CURVES AT DAM SITE
SEPTEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 21



LEGEND

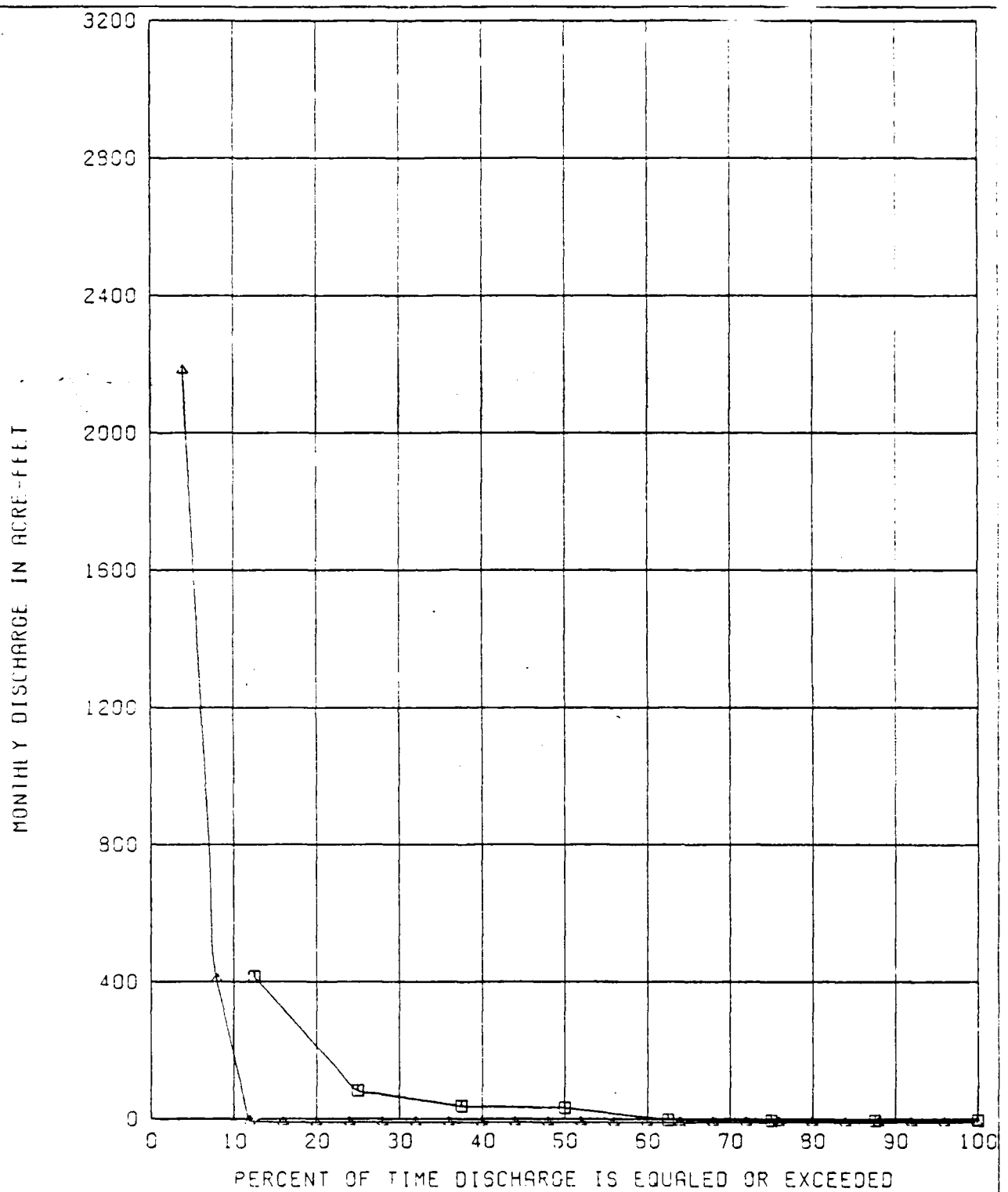
- PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1940-1949)
- △— POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

COLORADO RIVER BASIN, TEXAS
HORDS CREEK LAKE

FLOW DURATION CURVES AT DAM SITE
OCTOBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 22



LEGEND

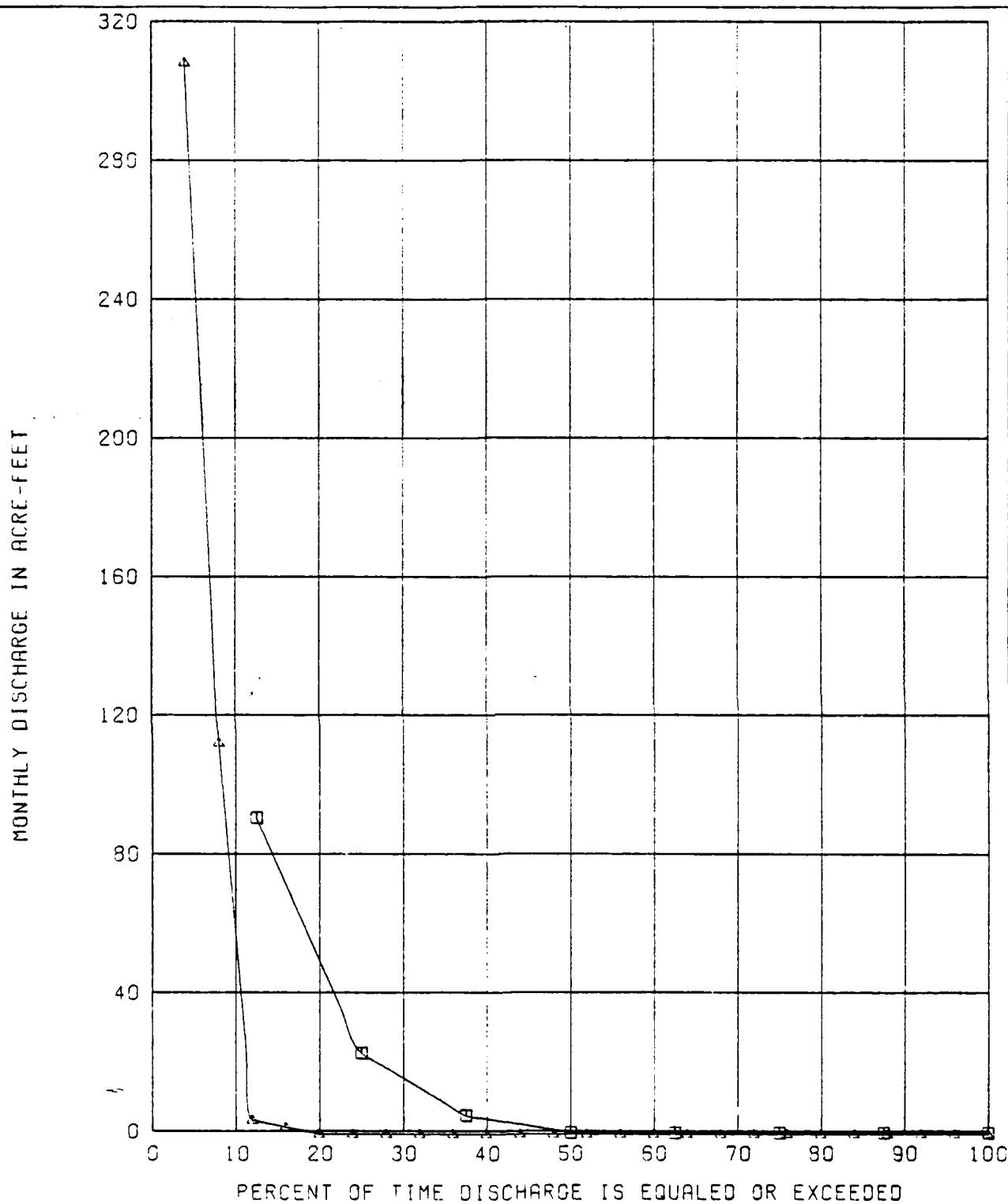
- — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1940-1949)
- ▲ — ▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

COLORADO RIVER BASIN, TEXAS
HORDS CREEK LAKE

FLOW DURATION CURVES AT DAM SITE
NOVEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 23



LEGEND

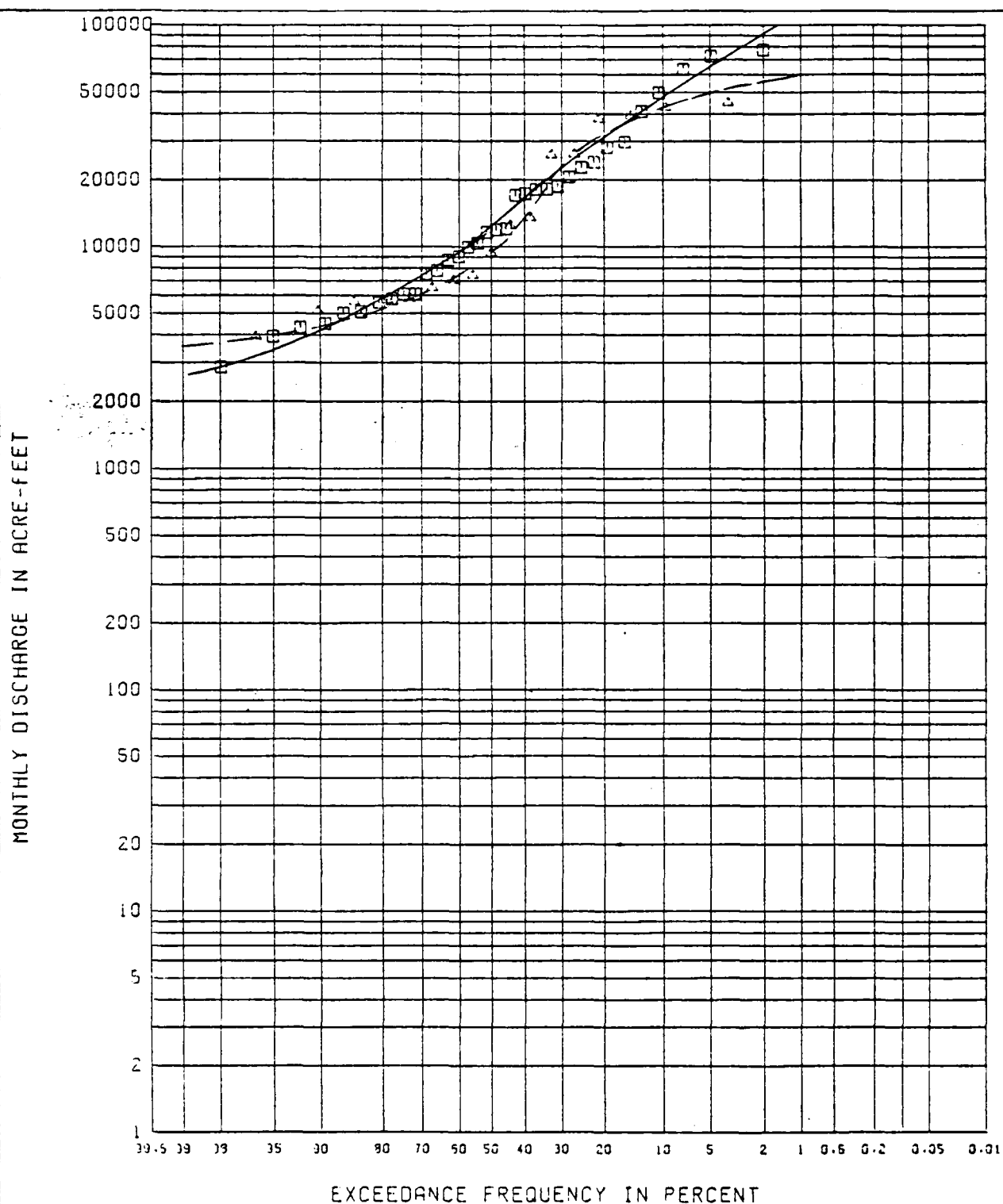
- — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1940-1949)
- △ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

COLORADO RIVER BASIN, TEXAS
HORDS CREEK LAKE

FLOW DURATION CURVES AT DAM SITE
DECEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 24



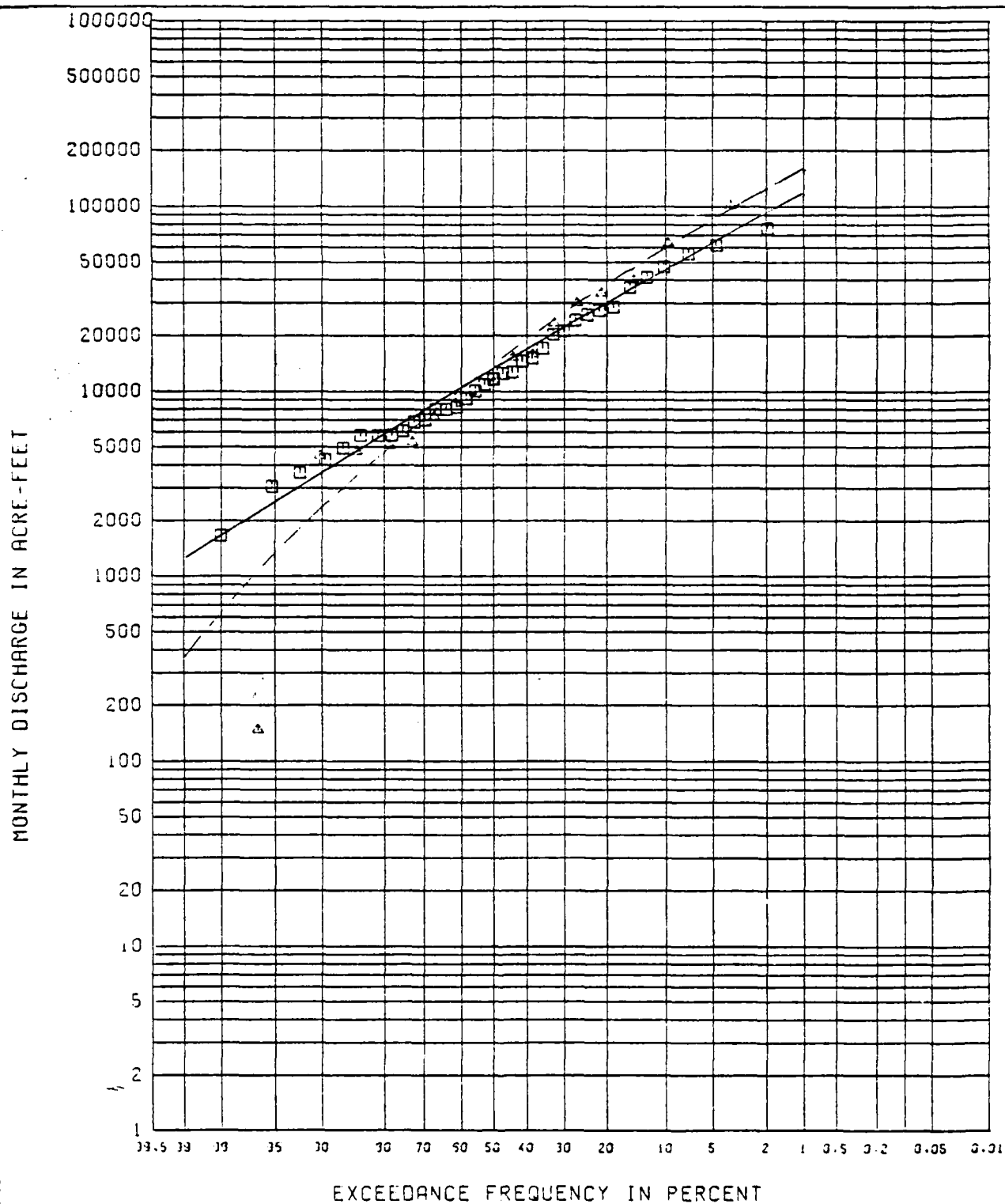
LEGEND

- — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1915-1943)
- △ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1963-1979)

GUADALUPE RIVER BASIN, TEXAS
CANYON LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
JANUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 1



LEGEND

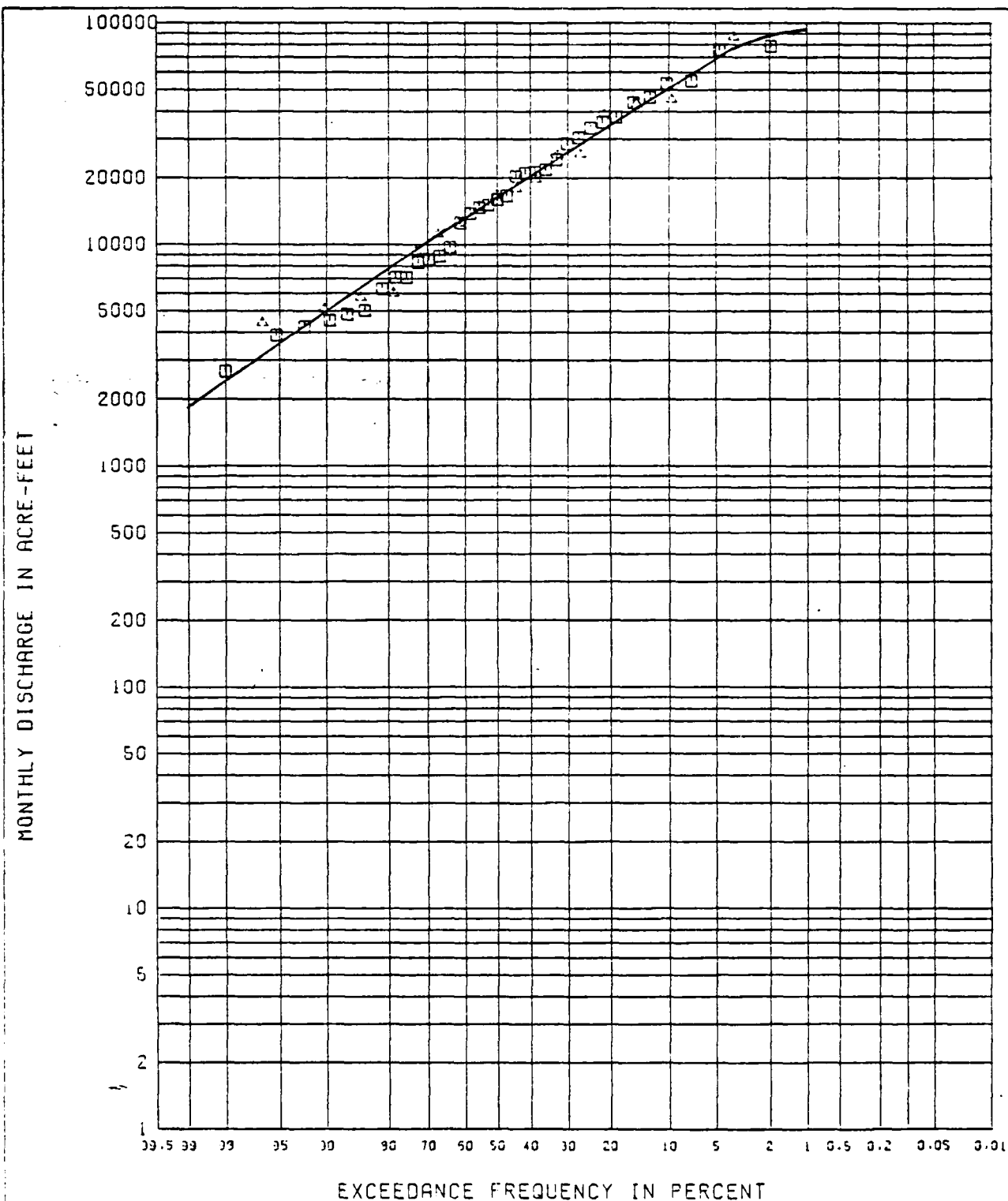
□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1915-1949)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1963-1979)

GUADALUPE RIVER BASIN, TEXAS
CANYON LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
FEBRUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 2



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1915-1943)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1963-1973)

GUADALUPE RIVER BASIN, TEXAS

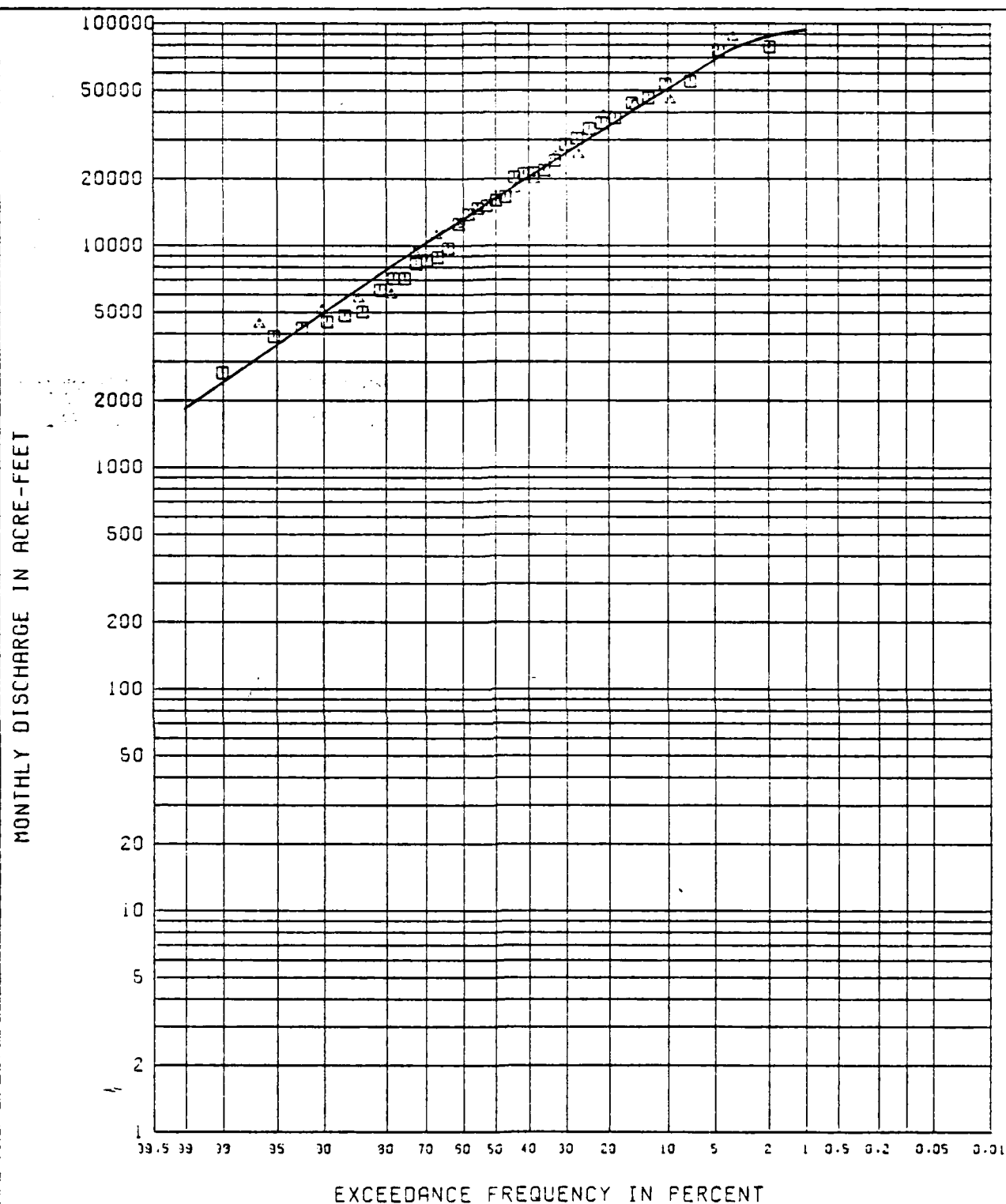
CANYON LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

MARCH FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 3



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1915-1943)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1963-1979)

GUADALUPE RIVER BASIN, TEXAS

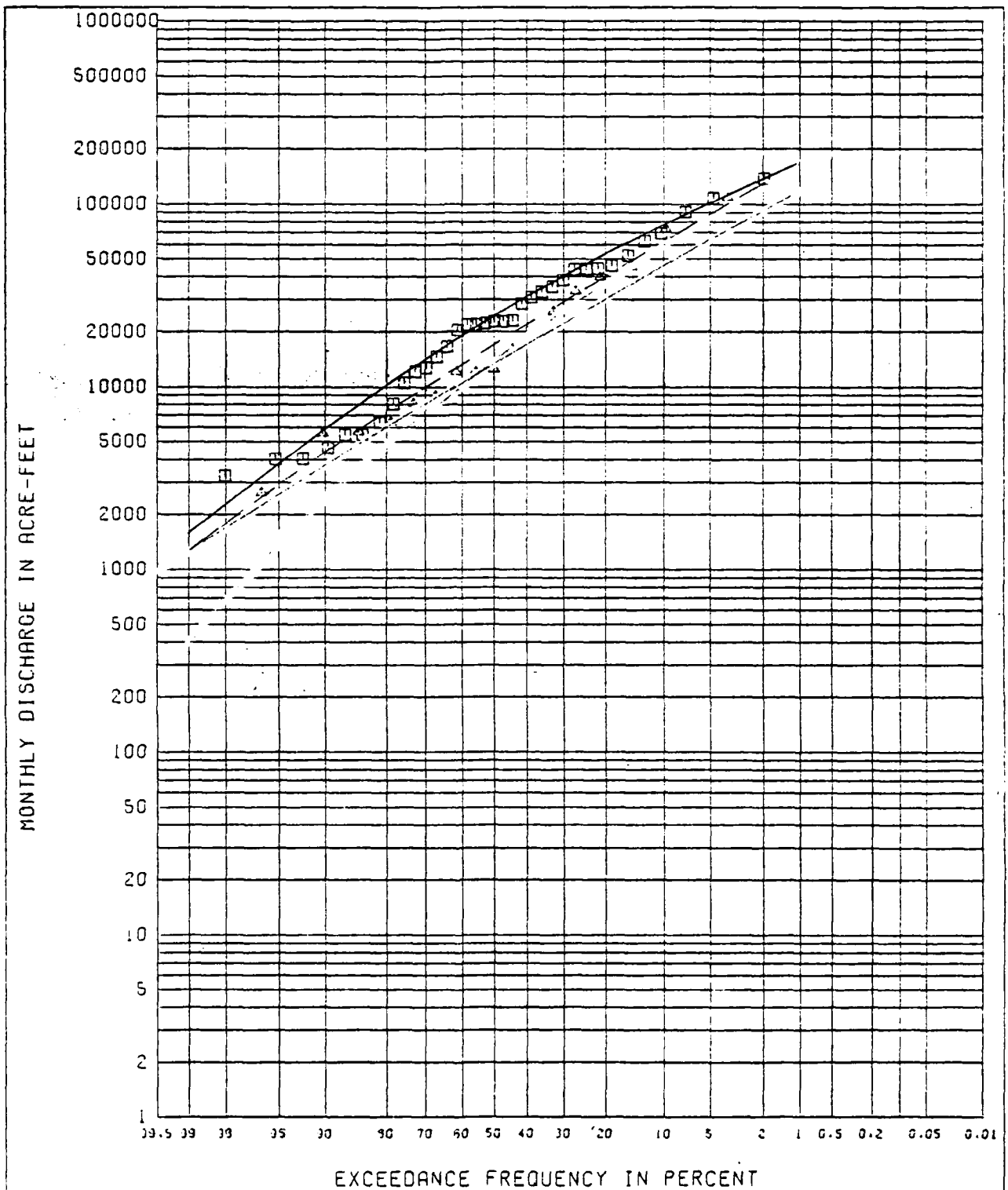
CANYON LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

MARCH FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 3



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1915-1949)

▲ — ▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1963-1979)

GUADALUPE RIVER BASIN, TEXAS

CANYON LAKE

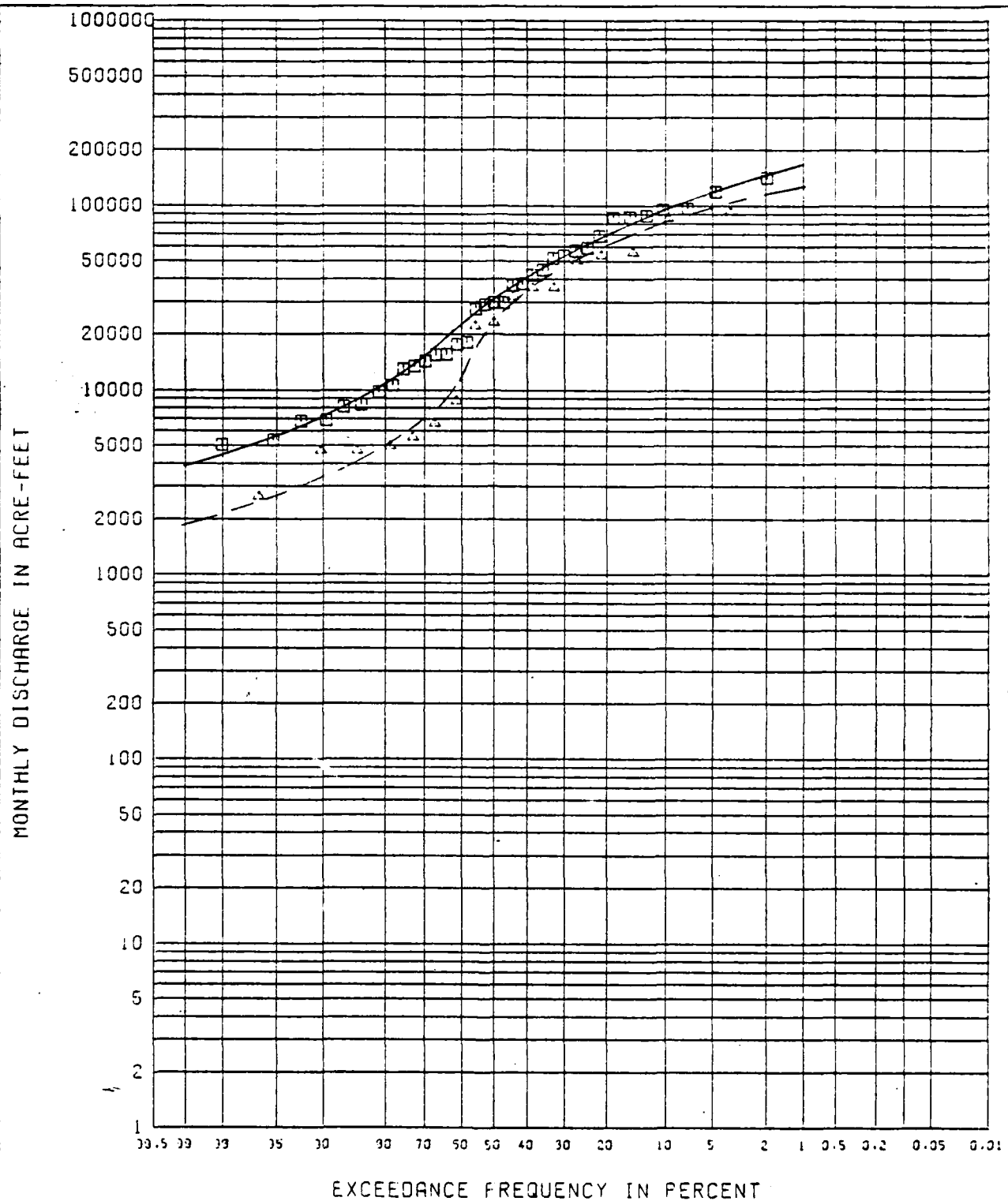
DISCHARGE-FREQUENCY RELATIONS

AT DAM SITE

APRIL FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 4



LEGEND

— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1915-1949)

— POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1963-1973)

GUADALUPE RIVER BASIN, TEXAS

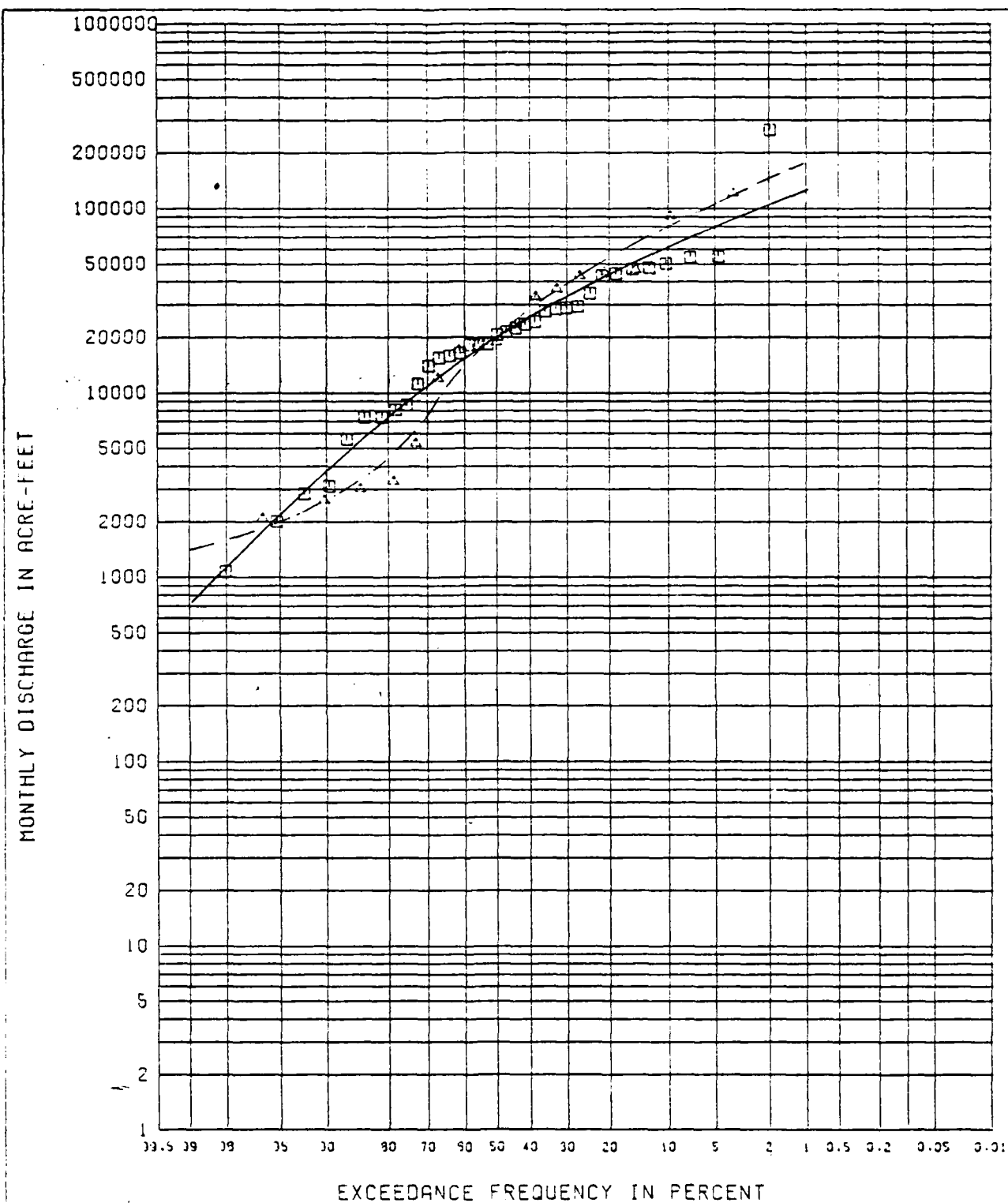
CANYON LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

MAY FLOWS.

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 5



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1915-1943)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1963-1979)

GUADALUPE RIVER BASIN, TEXAS

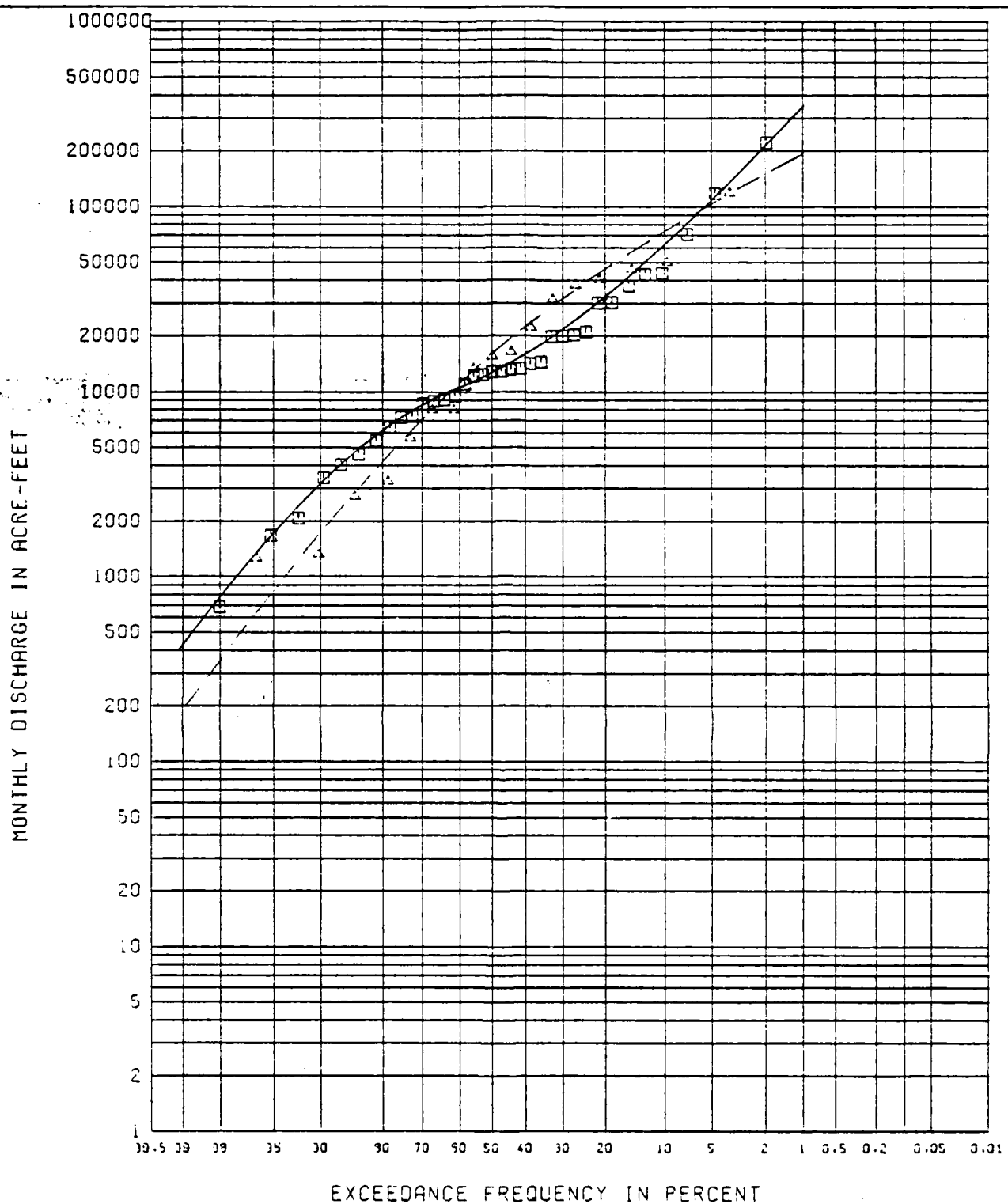
CANYON LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

JUNE FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 6



LEGEND

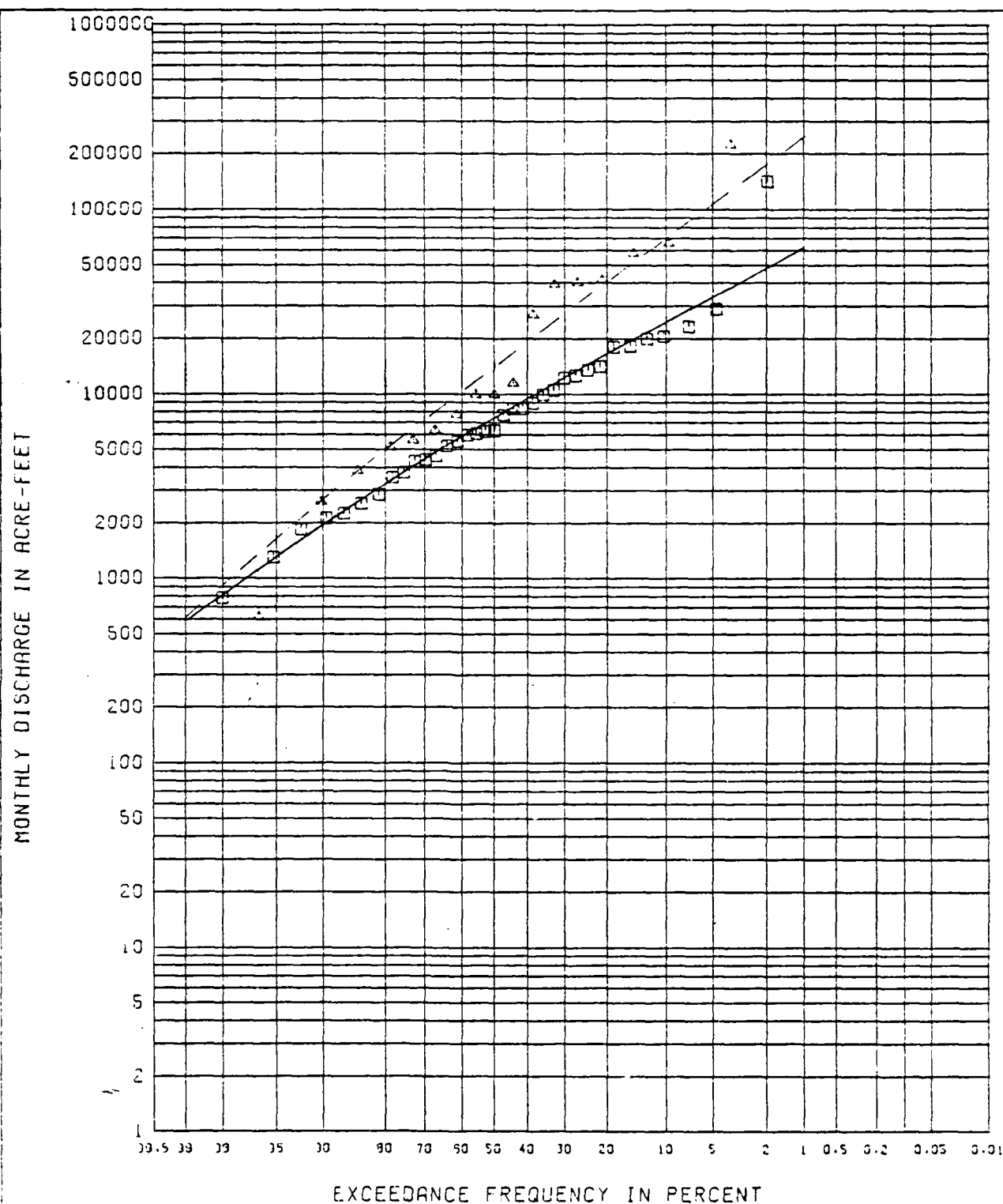
— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1915-1943)

- - - POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1973)

GUADALUPE RIVER BASIN, TEXAS
CANYON LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
JULY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 7



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1915-1943)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1963-1979)

GUADALUPE RIVER BASIN, TEXAS

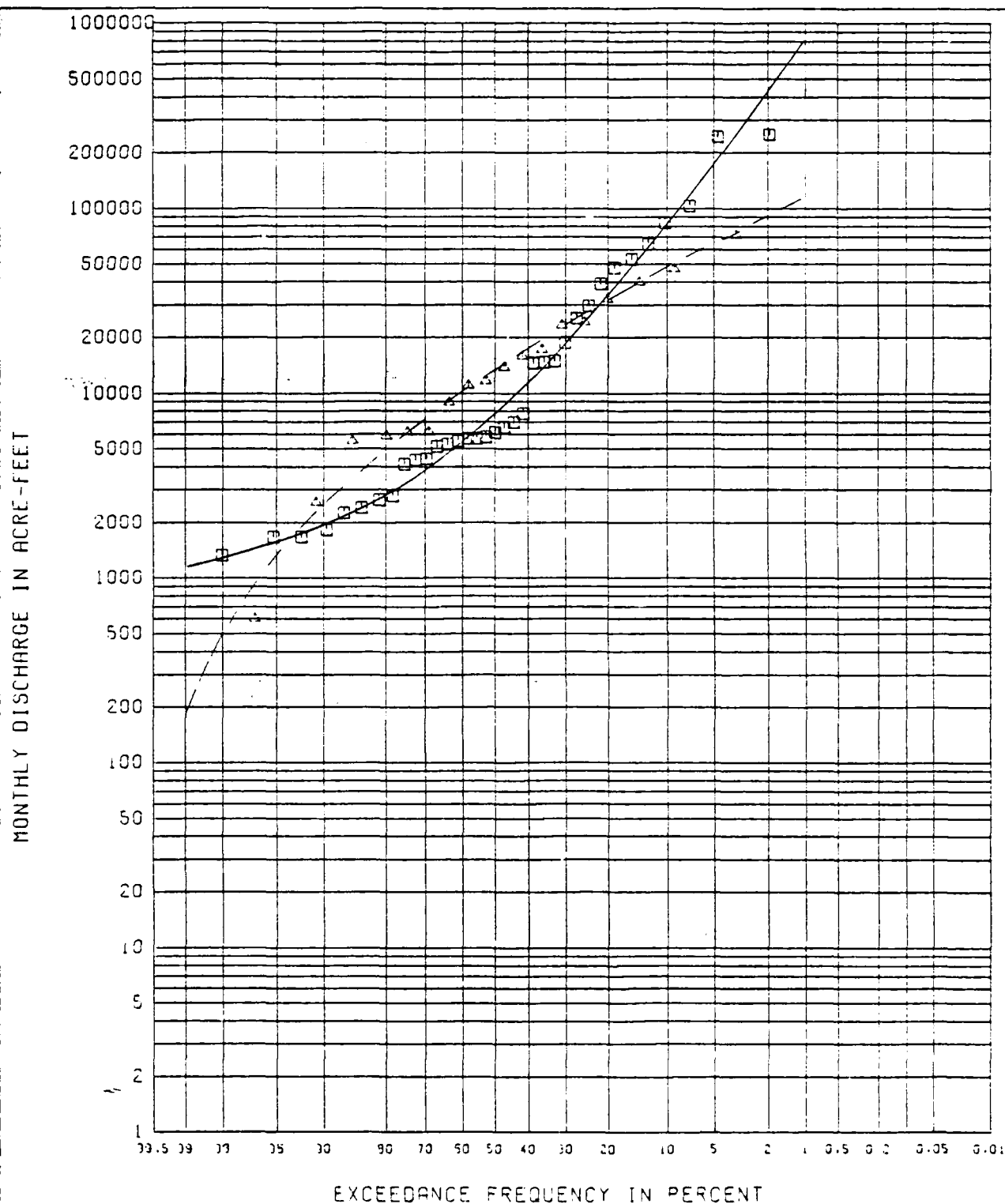
CANYON LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

AUGUST FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER, 1980

PLATE 8



LEGEND

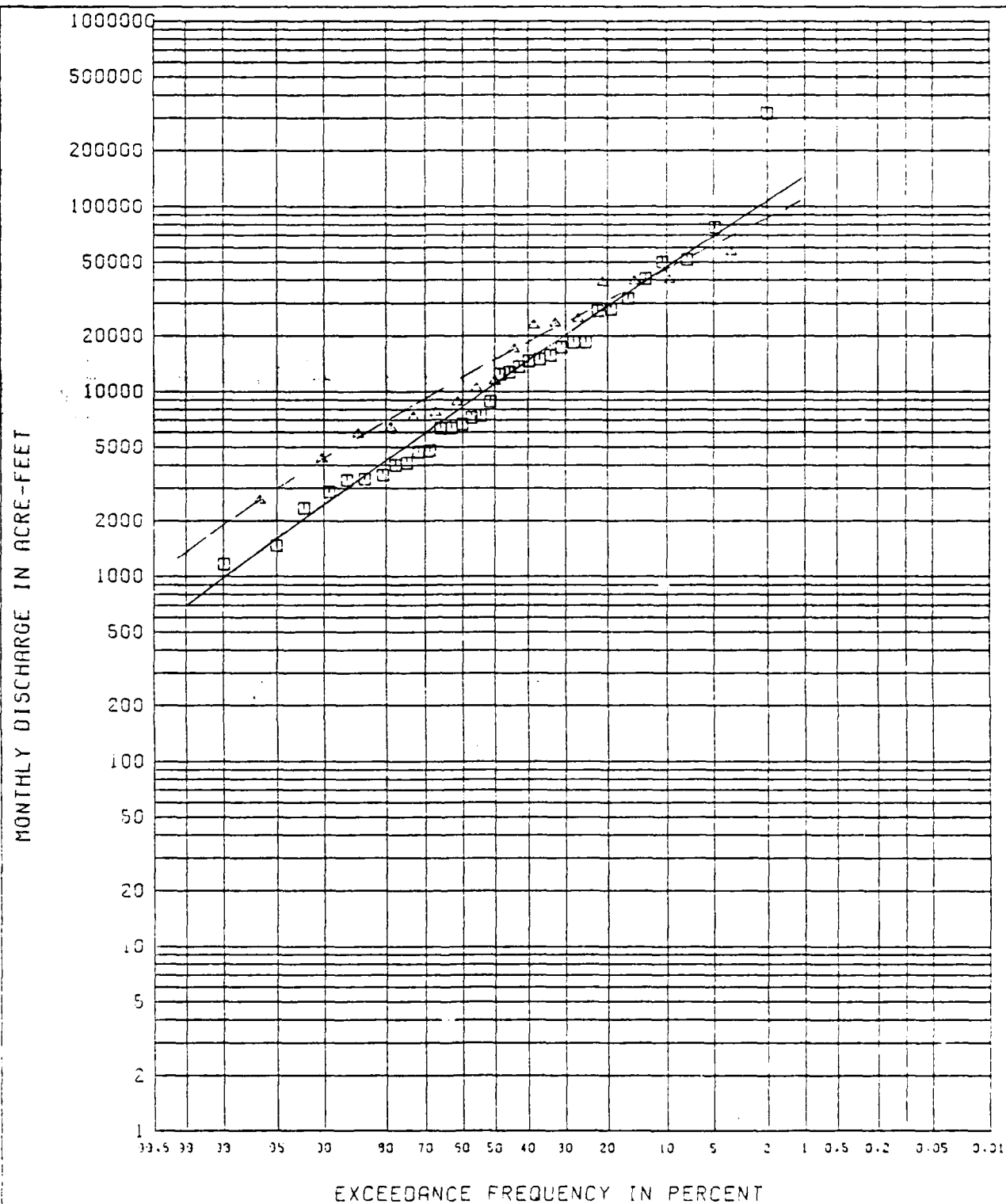
□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1915-1943)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1963-1973)

GUADALUPE RIVER BASIN, TEXAS
CANYON LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
SEPTEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 9



LEGEND

□ — □ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1915-1949)

△ — △ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1963-1973)

GUADALUPE RIVER BASIN, TEXAS

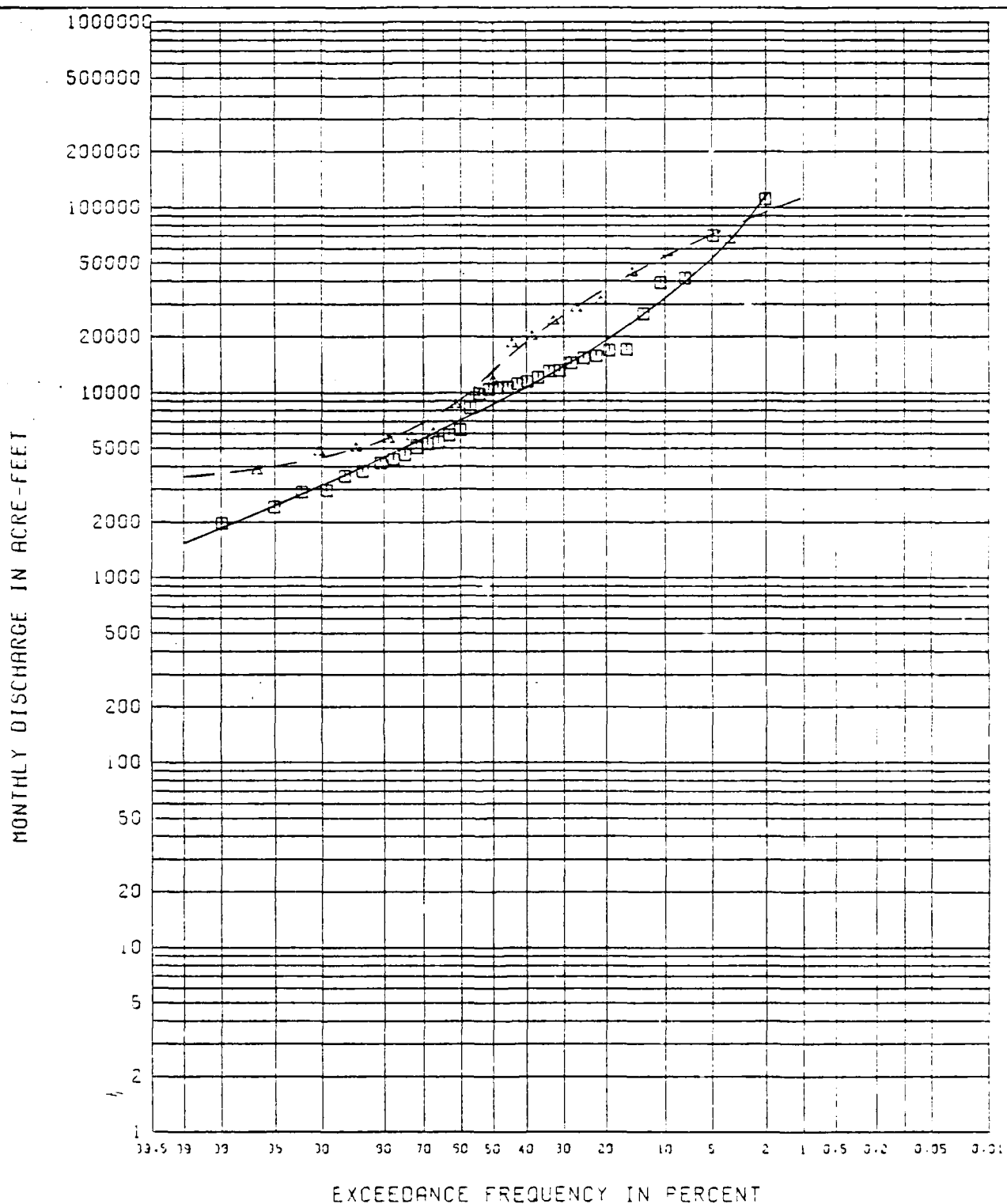
CANYON LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

OCTOBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 10



LEGEND

□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1915-1943)

△ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1973)

GUADALUPE RIVER BASIN, TEXAS
CANYON LAKE
DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE
NOVEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE II

AD-A156 497

RESERVOIR CONTROL CENTER: ACTIVITIES AND
ACCOMPLISHMENTS OF THE SOUTHWEST. (U) CORPS OF
ENGINEERS DALLAS TX SOUTHWESTERN DIV JAN 81

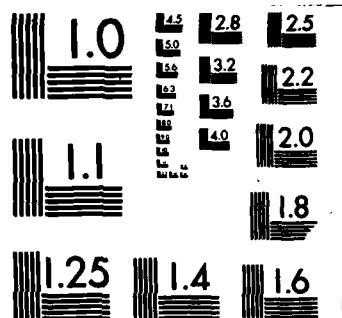
7/7

UNCLASSIFIED

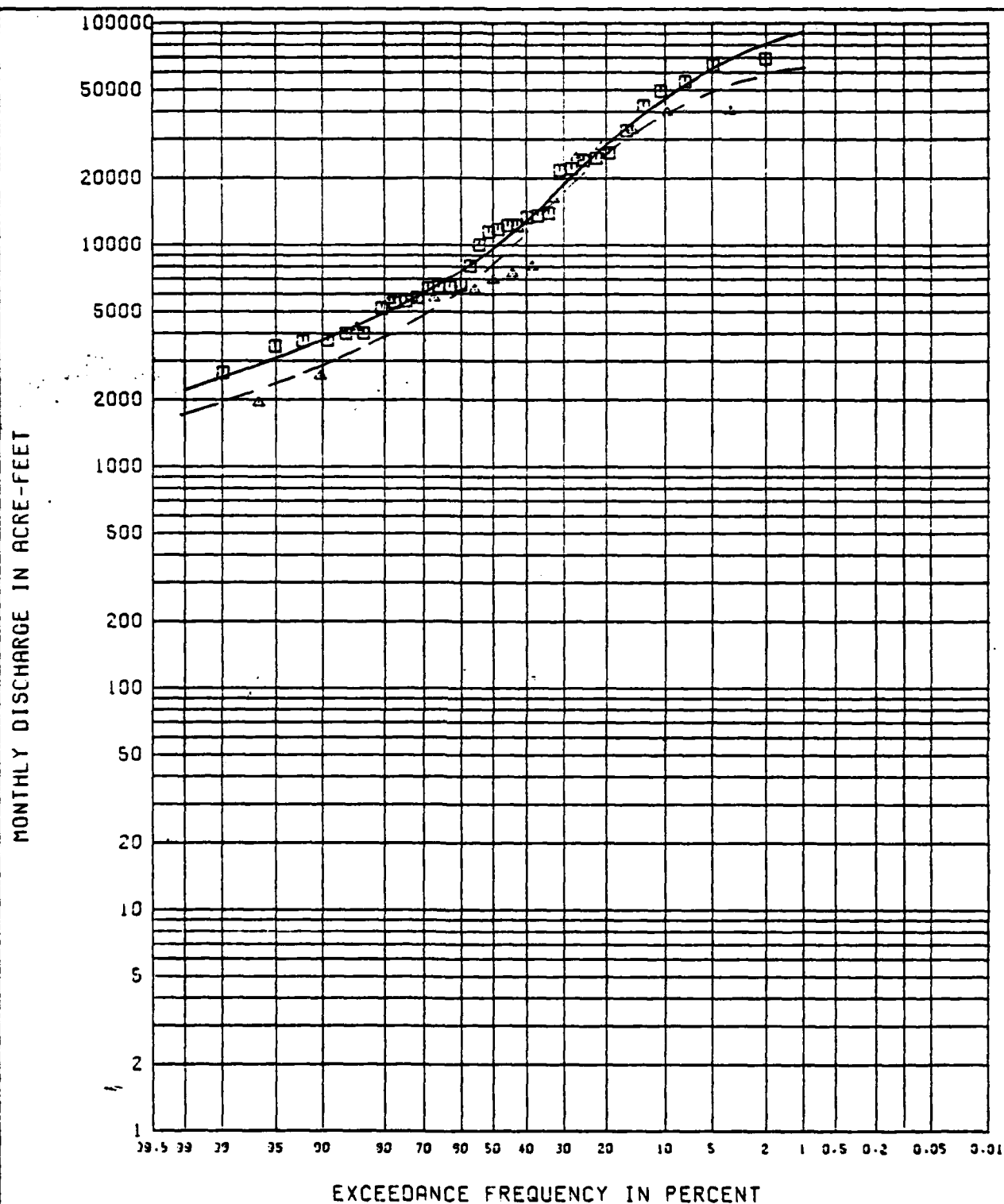
F/G 13/2

NL





MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A



LEGEND

—■— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1915-1943)

—▲— POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1963-1979)

QUADALUPE RIVER BASIN, TEXAS

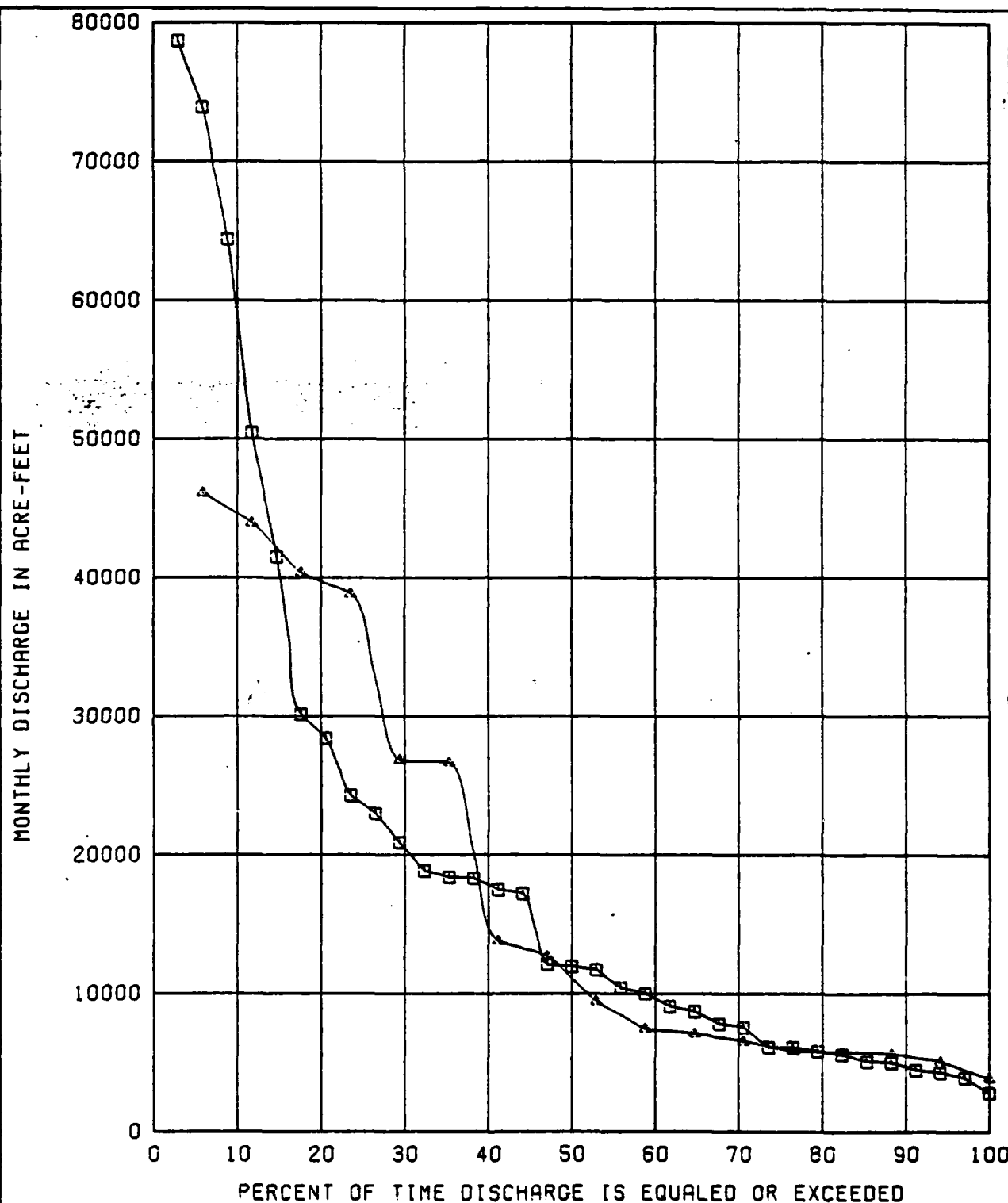
CANYON LAKE

DISCHARGE-FREQUENCY RELATIONS
AT DAM SITE

DECEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 12



LEGEND

□ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1915-1949)

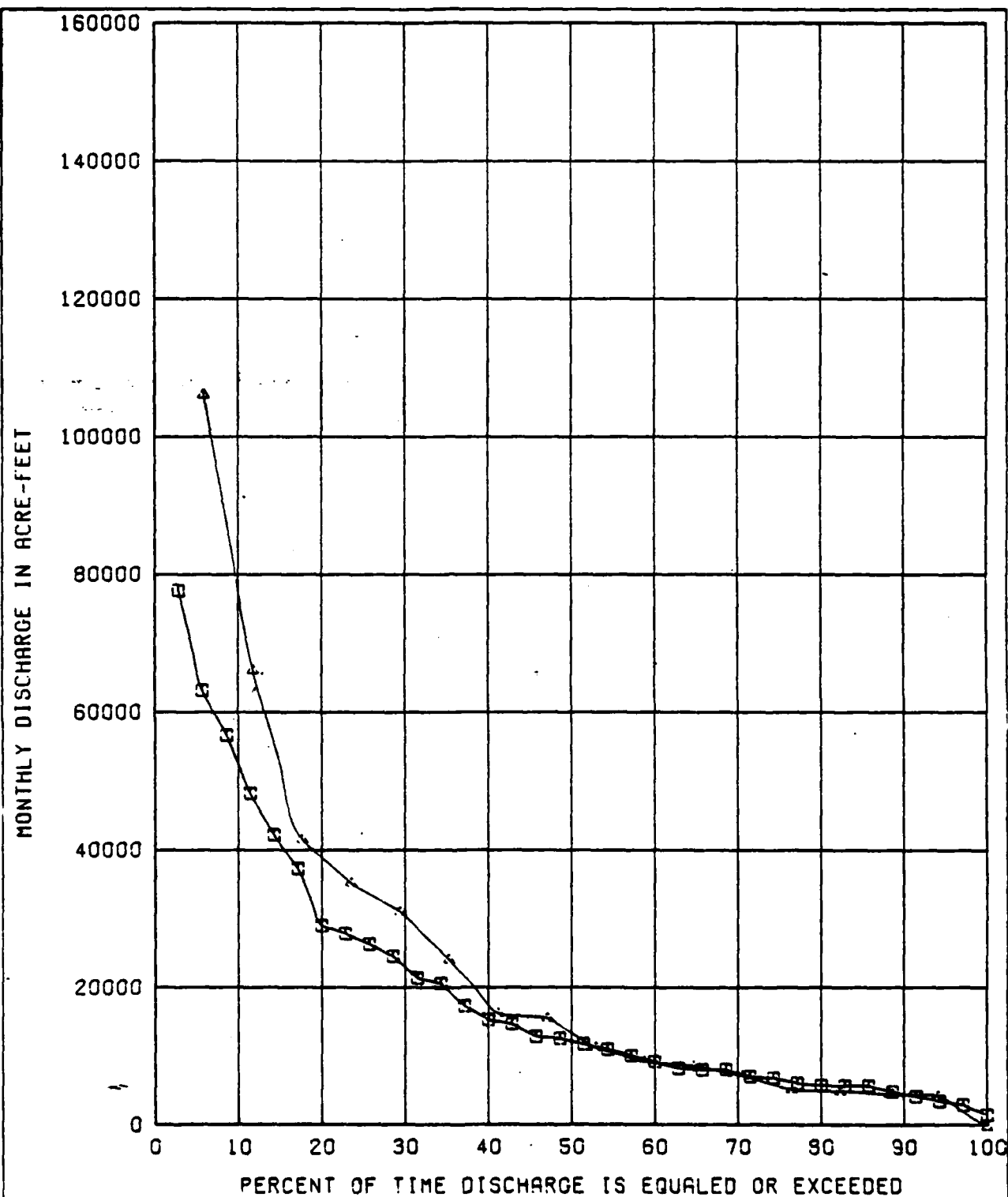
△ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1963-1979)

GUADALUPE RIVER BASIN, TEXAS
CANYON LAKE

FLOW DURATION CURVES AT DAM SITE
JANUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 13



LEGEND

—○— PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1915-1943)

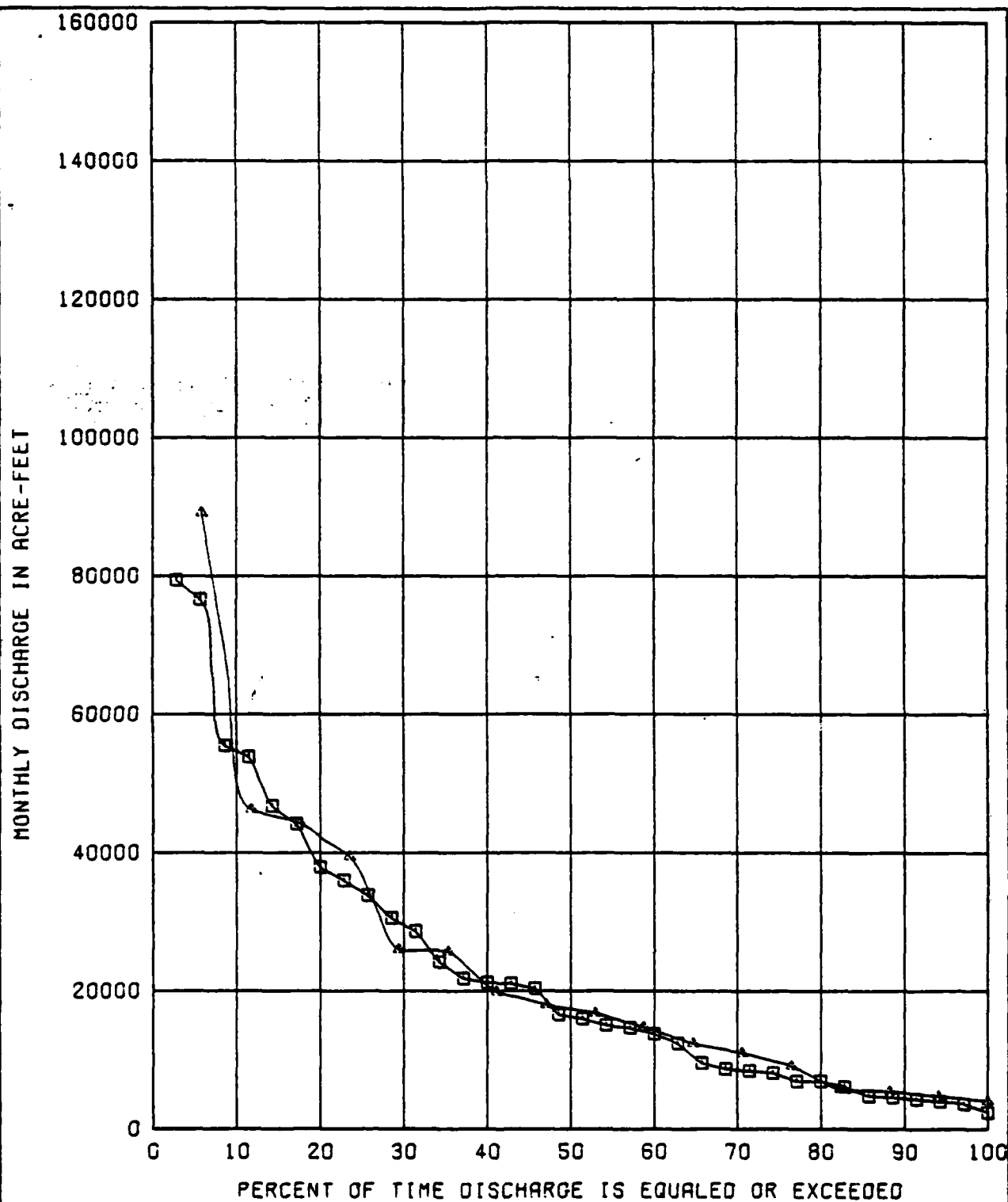
—x— POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1963-1973)

GUADALUPE RIVER BASIN, TEXAS
CANYON LAKE

FLOW DURATION CURVES AT DAM SITE
FEBRUARY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 14



LEGEND

□ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1915-1943)

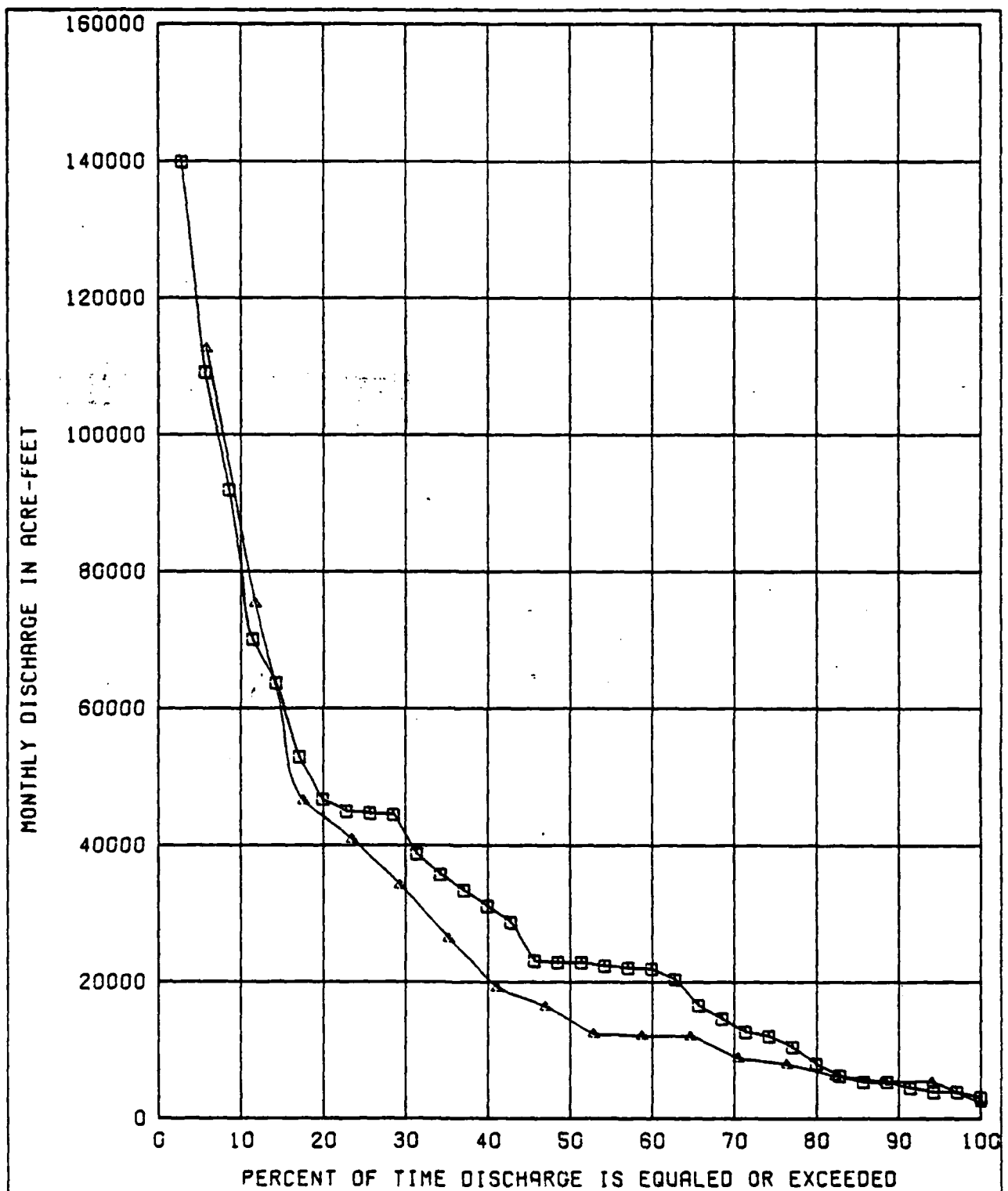
▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1963-1979)

GUADALUPE RIVER BASIN, TEXAS
CANYON LAKE

FLOW DURATION CURVES AT DAM SITE
MARCH FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 15



LEGEND

□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1915-1949)

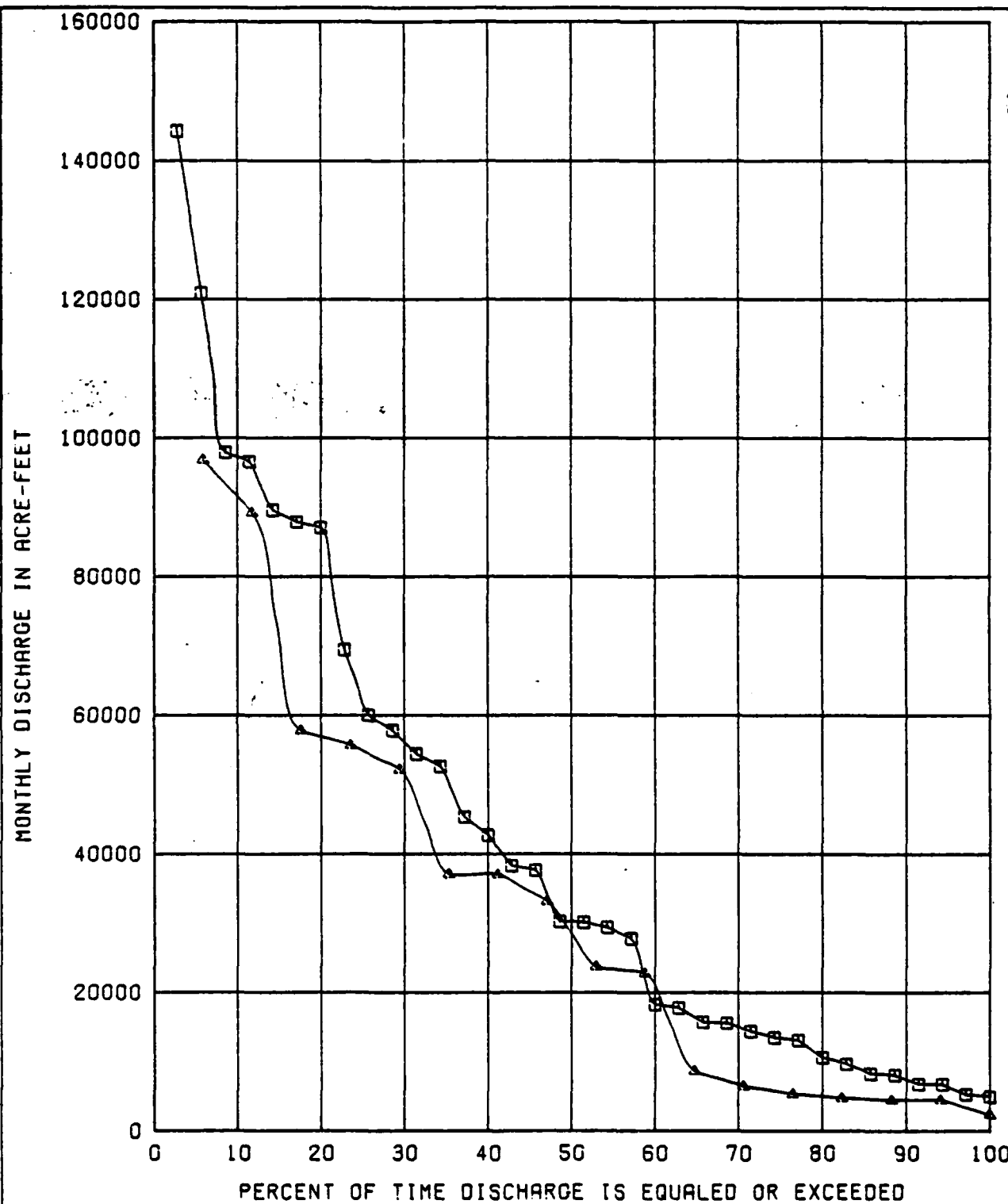
▲ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1963-1979)

GUADALUPE RIVER BASIN, TEXAS
CANYON LAKE

FLOW DURATION CURVES AT DAM SITE
APRIL FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 16



LEGEND

□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1915-1949)

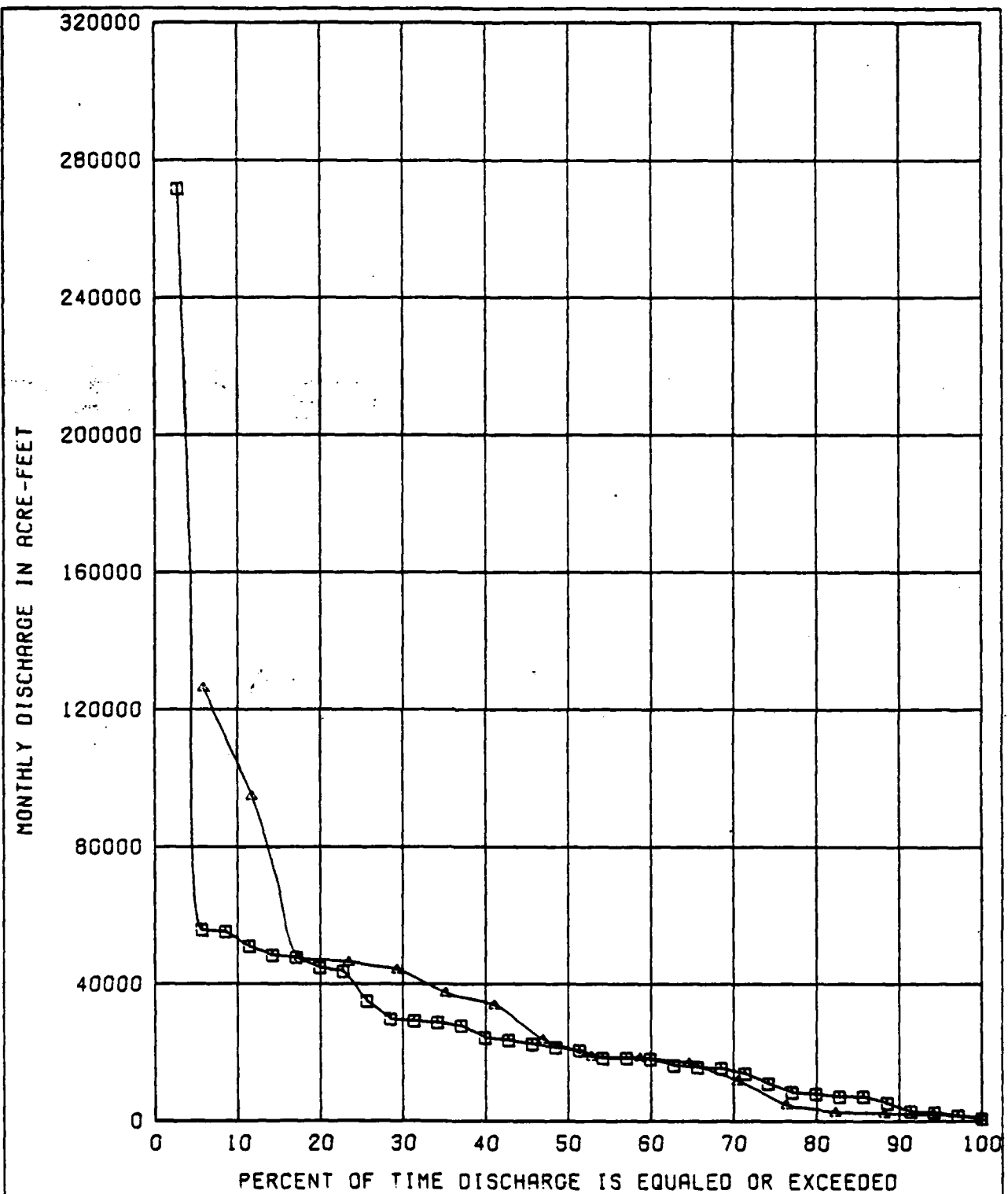
▲ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1963-1979)

GUADALUPE RIVER BASIN, TEXAS
CANYON LAKE

FLOW DURATION CURVES AT DAM SITE
MAY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 17



LEGEND

□ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1915-1949)

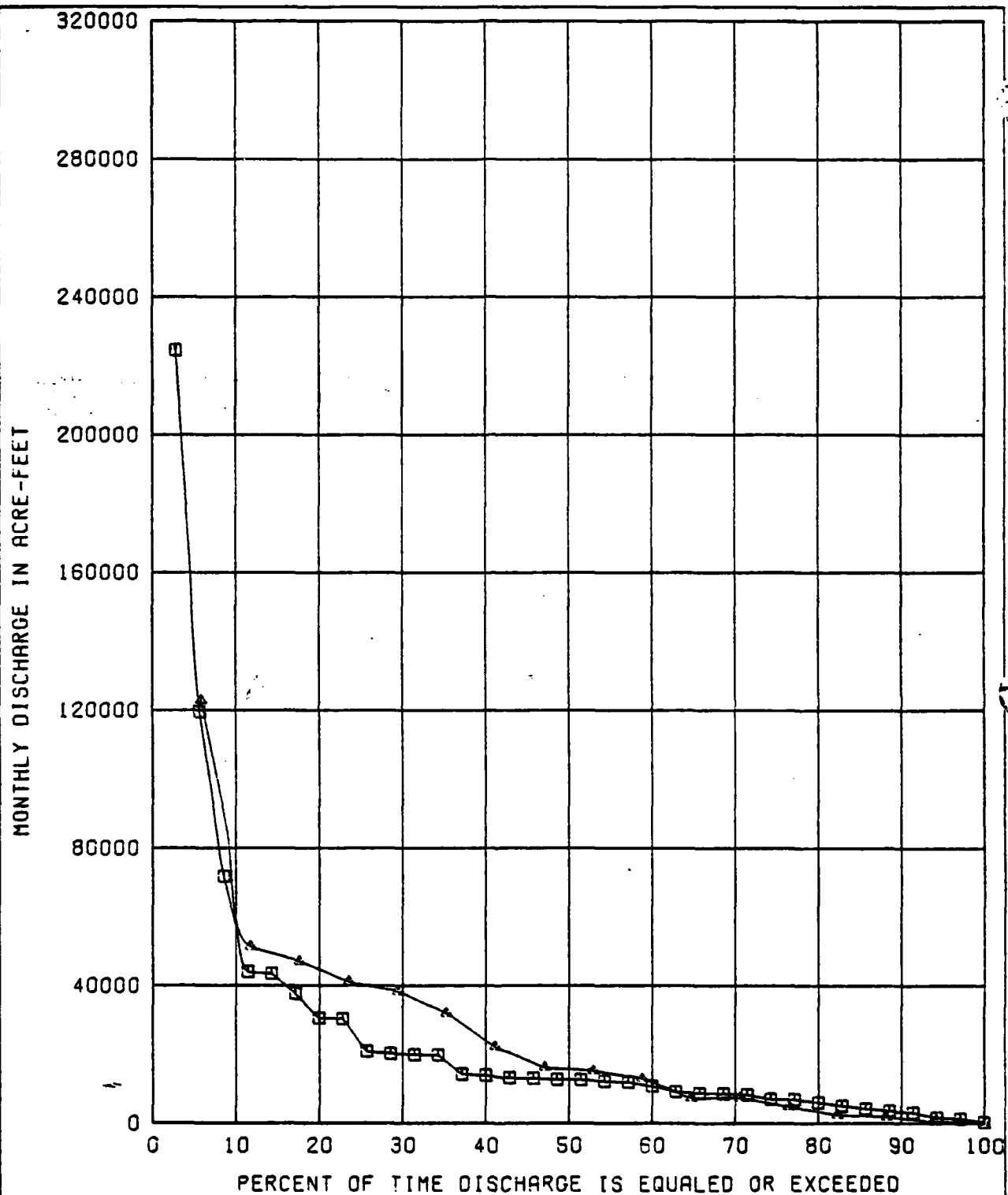
▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1963-1979)

GUADALUPE RIVER BASIN, TEXAS
CANYON LAKE

FLOW DURATION CURVES AT DAM SITE
JUNE FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 18



LEGEND

□ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1915-1949)

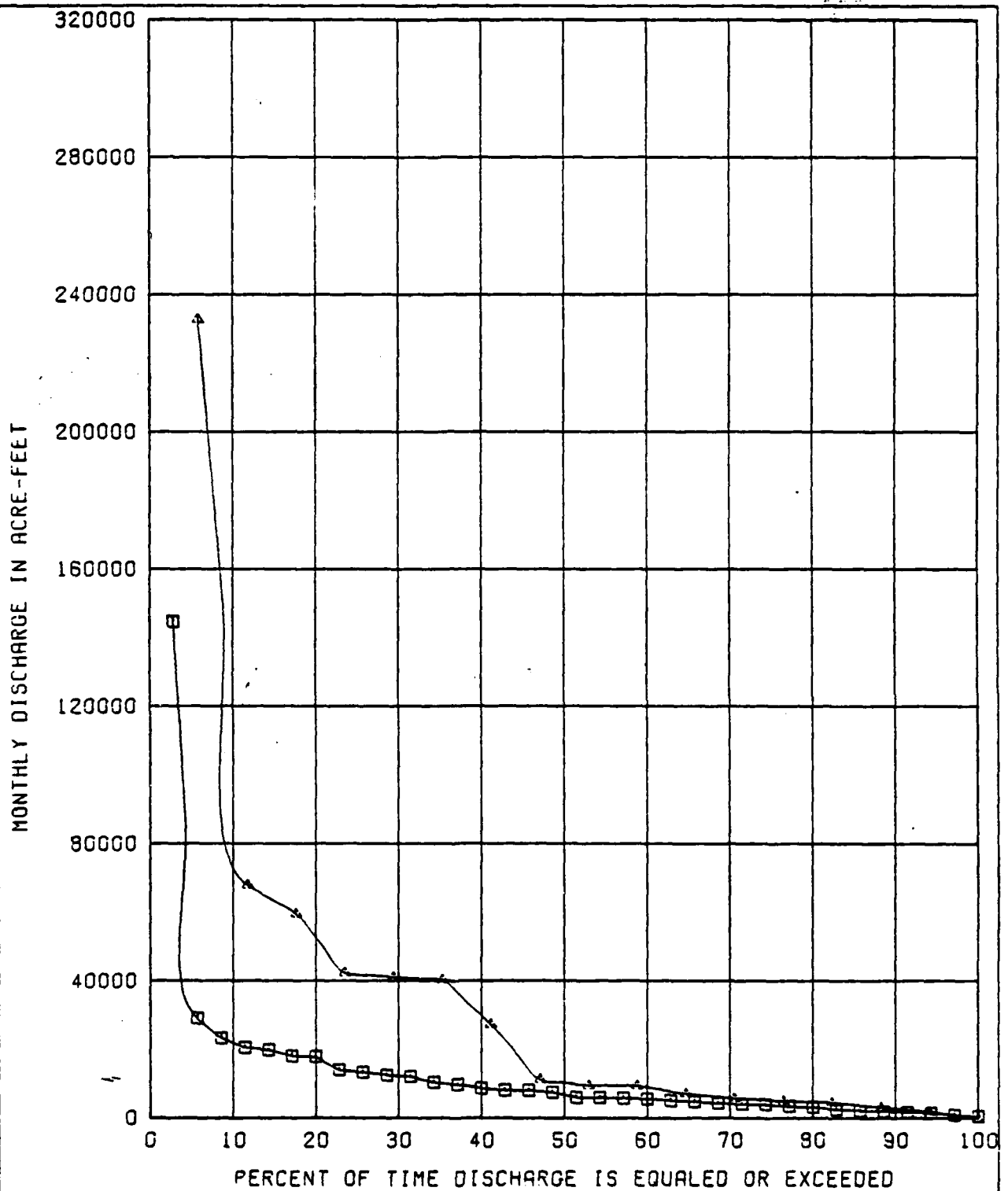
▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

GUADALUPE RIVER BASIN, TEXAS
CANYON LAKE

FLOW DURATION CURVES AT DAM SITE
JULY FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 19



LEGEND

□ — PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1915-1943)

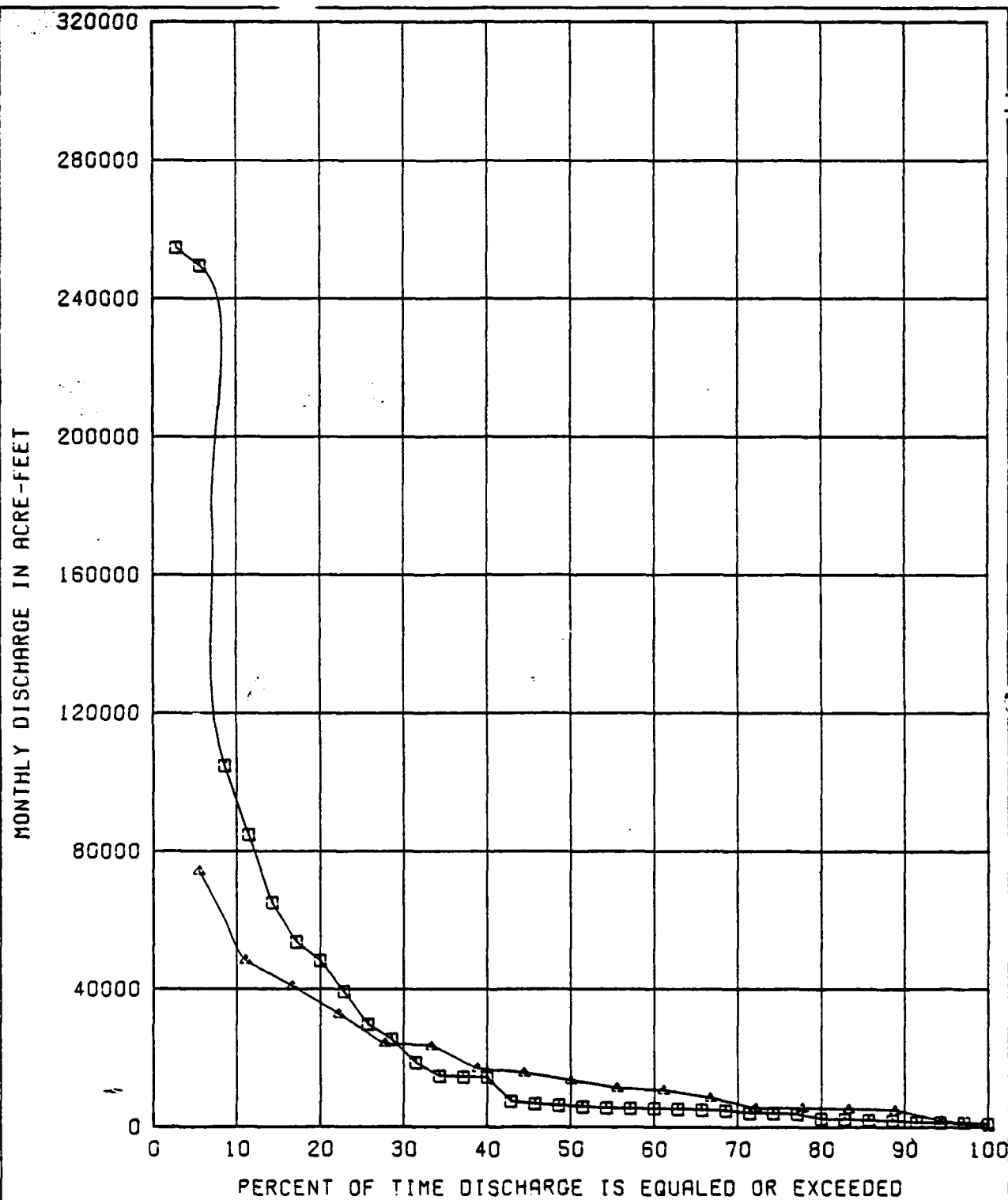
△ — POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1953-1979)

GUADALUPE RIVER BASIN, TEXAS
CANYON LAKE

FLOW DURATION CURVES AT DAM SITE
AUGUST FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 20



LEGEND

□ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1915-1949)

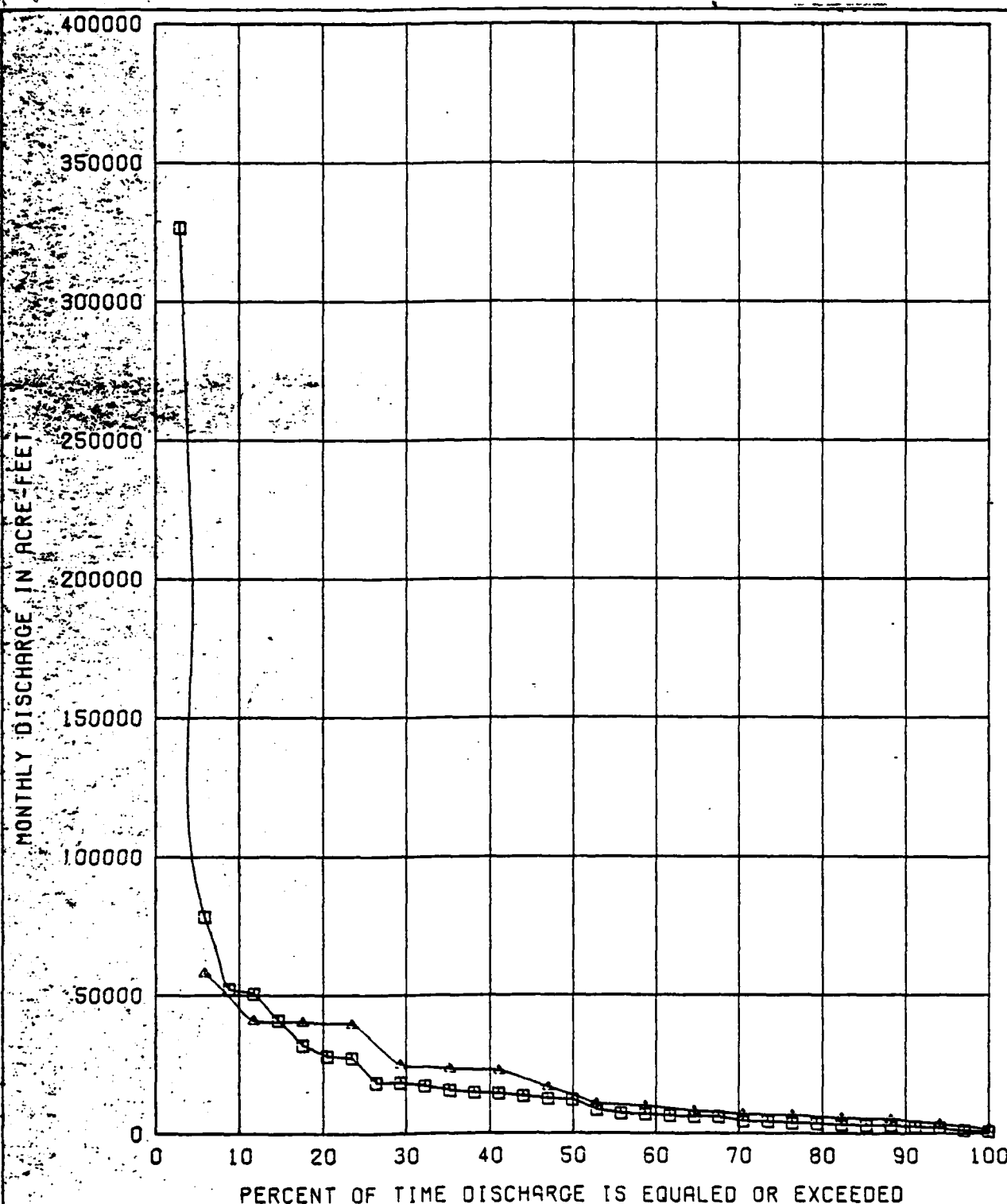
▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1983-1979)

GUADALUPE RIVER BASIN, TEXAS
CANYON LAKE

FLOW DURATION CURVES AT DAM SITE
SEPTEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1990

PLATE 21



LEGEND

□ PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1915-1949)

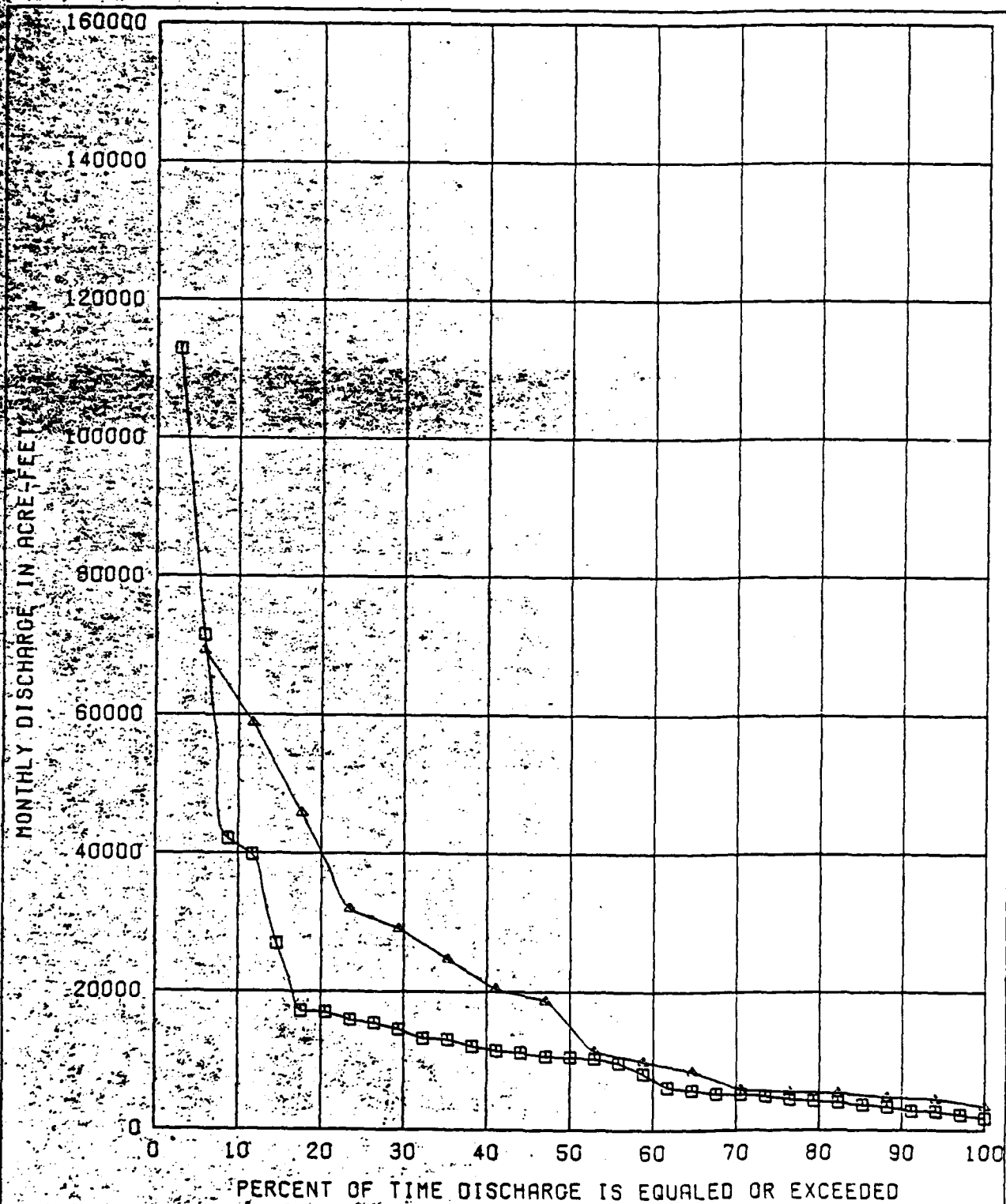
▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1963-1979)

GUADALUPE RIVER BASIN, TEXAS
CANYON LAKE

FLOW DURATION CURVES AT DAM SITE
OCTOBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 22



LEGEND

- PRE-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1915-1949)
- ▲ POST-IMPOUNDMENT CONDITIONS
(PERIOD OF RECORD 1963-1979)

GUADALUPE RIVER BASIN, TEXAS
CANYON LAKE

FLOW DURATION CURVES AT DAM SITE
NOVEMBER FLOWS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
TO ACCOMPANY INSTREAM FLOW PROBLEMS AND NEEDS
EVALUATION REPORT OF DECEMBER 1980

PLATE 23

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